The role of dummy auxiliaries in the acquisition of finiteness in Dutch

A comparison between various groups of L1 and L2 learners

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The role of dummy auxiliaries in the acquisition of finiteness in Dutch

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Esta obra é dedicada à minha Mãe,

Cândida Romano Julien,

que durante toda a minha vida me suportou incondicionalmente
na perseguição dos meus sonhos e das minhas aspirações
pessoais e profissionais.

Sem a sua confiança em mim, Mãe,
eu nunca teria percorrido esta distância toda!

Obrigada

Contents

1. General introduction

Mammie is dansen, baby wees maar stil	Mummy's gone dancing, quiet now, baby.
…	…
Mammie flirt met de jongens van de band	Mummy's flirting with the boys in the band.
Pappie blijft thuis bij vent	Daddy's at home with the kid.
Als zij thuiskomt in de afternoon	When she comes home in the afternoon,
Krijg je 'n fijne cocktailzoen	You'll get a right cocktail [-flavoured] kiss.
Mammie is dansen mijn kind	Mummy's gone dancing my child.

Louis Davids

Mammie	*is*	*dansen*
(lit.) 'Mummy	is	dance'.INF

'*Mummy's Gone Dancing*.'

This excerpt from the lyrics of the song "Moeder is dansen" (lit. 'mother is dance.INF'), by the Dutch cabaret artist Louis Davids (1883-1939), illustrates the only context in which the construction *zijn* ('be')+INF can be used in Standard Dutch. Here the speaker informs us that the person in question is doing something away from the place where the conversation is taking place. Using this construction in other contexts renders an ungrammatical utterance. Researchers (Julien, Van de Craats and Van Hout, 2013; Starren, 2001; Van de Craats, 2009; Van de Craats and Van Hout, 2010; Verhagen, 2013) have observed that many first and second language learners, in the early stages of Dutch language acquisition, use this construction, but not with this absentive meaning. The same type of grammatical construction, with the auxiliary (verb) *gaan* ('go') instead of *zijn*, has also been evidenced in the learner varieties of monolingual and bilingual children and adult learners of Dutch (Blom and De Korte, 2008, 2011; Cornips, 2013; Hulk and Cornips, 2005; Jordens and Dimroth, 2006; Julien et al., 2013; Lalleman, 1986; Orgassa, 2009; Starren, 2001; Van de Craats, 2009; Van de Craats and Van Hout, 2010; Van Kampen, 1997; Van Kampen and Wijnen, 2000; Verhagen, 2009, 2013; Zuckerman, 2001; Zwitserlood, 2014). The latter is a grammatical construction in Dutch used to express prospective aspect. However, these learners use it instead of a finite lexical verb, to describe an action taking place at the moment of

speaking - hence without its prospective meaning. Because these 'auxiliary-like' elements do not seem to be used to convey aspectual or tense features, as is the case with common auxiliary verbs, they are called dummy auxiliaries. Dummy auxiliaries have also been identified in pidgin and creole languages (e.g. Rickford, 1975; Velupillai, 2002) and in children's and adult learner varieties of languages like French, German and English (Fleta, 2003; García Mayo, Ibarrola and Liceras, 2005; Huebner, 1989; Huebner, Carroll, and Perdue, 1992; Schimke, 2013; Zobl, 2002). The fact that dummy auxiliary use is evidenced in various languages suggests that it may be a universal rather than language-specific phenomenon in the process of language acquisition.

In view of these findings, the question to raise is: What is the function of dummy auxiliaries in those different types of language acquisition? The present dissertation reflects our endeavour to answer this question. It concerns the use or occurrence of this construction while learning to express temporality and acquiring finiteness in Dutch as a first (L1), second (L2) or additional language (AL) in the context of Dutch as it is spoken in the Netherlands. The participants involved in the studies reported here are monolingual and bilingual typically developing children, monolingual and bilingual children with Specific Language Impairment (SLI) and low-educated, low-literate adult learners of Dutch as an Additional Language (referred to from this point as low-literate DAL learners, also indicated by the term LESLLA[1] learners; see Van de Craats, Kurvers and Young-Scholten (2006)).

1.1. Mono- and bilingualism

Across the world today, multilingual speakers outnumber monolingual speakers (Grosjean, 2010; Romaine, 1995; Tucker, 1999). In Europe the percentages are as follows: 46% of the population is monolingual, 54% are able to hold a conversation in at least one additional language, a quarter (25%) are able to speak at least two additional languages and one in ten (10%) are conversant in at least three additional languages (Special Euro Barometer 386, 2012). Although we do not have precise numbers, the tendency regarding multilingualism in the Netherlands reflects that of other countries of the European Union.

[1] LESLLA means Low Educated Second Language and Literacy Acquisition for adults and is the name of an international forum of researchers who share an interest in research on the development of second language skills by adult immigrants with little or no schooling prior to entering their new country of residence.

For the last half century, people of Turkish, Moroccan, Surinamese and Antillean descent have formed the largest immigrant groups in the Netherlands. Most adults from these groups are long-term residents[2]. Their children are born and raised in the Netherlands and are mostly bilingual. Some acquire both Dutch and another language simultaneously, and others acquire Dutch sequentially after having been exposed to another language in the first years of their lives. Most parents of these children are second or third generation immigrants, have themselves been raised bilingually in the Netherlands, have a relatively good command of both Dutch and their mother tongue, and choose to raise their children bilingually. More recent immigrant groups are those from countries within the European Union, such as Poland, Spain and Italy, and the diverse group of war refugees from countries like Somalia, Syria, Afghanistan and Iraq. The latter have arrived in the Netherlands so recently that parents and children alike are still in the process of learning and acquiring Dutch.

By the age of four a monolingual typically developing child is able to produce complex and intelligible sentences. Bilingual children also show this rapid language acquisition process. Like monolingual children, after four years of continuous exposure to the second language, they will have a good command of that language except for certain constructions which may take longer to learn or may even never be mastered (Genesee, Paradis, and Crago, 2004; Orgassa, 2009). This can be explained by the fact that language input and communication opportunities in the second language are often much less favourable than those of monolingual children in their mothertong. For a large percentage of the children of immigrants who grow up in the Netherlands, Dutch comes into their lives when they start attending nursery school at around the age of two and half. The exposure to Dutch is often limited to those hours of nursery school.

1.2. Specific Language Impairment

Some children have problems acquiring language, even though no etiology such as hearing loss, low non-verbal intelligence or neurological damage has been

[2] In the European Union, long-term resident status is acquired after five years of continuous legal residence (Council Directive 2003/109/EC).

identified. These children have what is commonly called Specific Language Impairment (SLI[3]) (Leonard, 1998).

Children with SLI show an overall delay in their language development compared to typically developing (TD) age peers. In addition, they have great difficulties with specific linguistic structures that go beyond what their general delay would indicate (Rice, 2003, 2004).

There is an ongoing debate concerning the mechanisms causing SLI which basically evolves around three different perspectives: a perspective based on the idea that children with SLI have a cognitive/perceptual processing deficit (Ellis Weismer, Evans, and Hesketh, 1999; Kohnert and Windsor, 2004; Miller, Kail, Leonard, and Tomblin, 2001). Another perspective has its basis in the belief that these children have a deficit in the way linguistic information is represented in their brain (Clahsen, Bartke, and Gollner, 1997; Rice, 2003; Van der Lely, 2003; Wexler, 2003). The third account contends that SLI is caused by a deficit in accessing and integrating different types of information at linguistic interfaces, and relating language to other cognitive systems. In other words, SLI reflects a deficit in the performance systems (Jakubowicz, 2003; Jakubowicz and Roulet, 2004).

According to the *representation deficit* account, the 'disrupted' structures found in SLI are those that require certain linguistic computations for which children with SLI have incomplete or faulty abilities to establish the appropriate representation (Wexler, 2003). An example of a disrupted structure in English is the tense marking morphology. For example, the gap that TD children show between their mastery of non-tense marking morphemes and tense marking morphemes is about 12 months (Brown, 1973; de Villiers and de Villiers, 1973), whereas children with SLI, who in their overall language development lag approximately 2 years behind TD developing children, show a gap of about 4 years between their mastery of plural [-s] and third person singular morpheme [-s] (Rice, 2003; Rice and Wexler, 2001). Thus, the magnitude of the gap for children with SLI is much greater than their overall language delay would suggest. Rice and Wexler (1996, 2001) and Rice, Wexler and Hershberger (1998) have argued that these disrupted structures could be seen as

[3] In recent years, the use of the term SLI as a diagnostic label for children with 'unexplained language problems' and the validity and usefulness of exclusionary criteria, are increasingly being questioned. For a thorough discussion of this issue, see Bishop (2014); Reilly, Bishop and Tomblin (2014) and Reilly, Tomblin, Law, McKean, Mensah, Morgan, Goldfeld, Nicholson and Wake (2014). Although we are in favour of dropping the term *specific* because, among other things, 'pure cases' are an exception and therefore not representative of children in the clinical context, in this thesis we will use it in order to avoid confusion between our terminology and that of previous studies.

clinical markers. So, measuring children's accuracy in using them could differentiate the clinical from the nonclinical population.

The processing account differs from the other accounts in the explanations it offers for the observed delay in language acquisition displayed by SLI children. One explanation is based on the *surface hypothesis* that claims that SLI children find less phonetically salient morphemes more difficult to acquire because they have perceptual limitations (Leonard, Bortolini, Caselli, McGregor and Sabbadini, 1992; Leonard and Eyer, 1996; Leonard, Eyer, Bedore and Grela, 1997). According to this hypothesis, grammatical morphology would pose difficulties in many languages, because these morphemes are often affixes of brief phonetic duration, for instance, English tense morphemes like [-ed] and [-s] are most often pronounced with single consonantal, nonsyllabic allomorphs. Another explanation is that SLI children show limitations in processing speed. That is to say, they have a generalized slowing of their ability to intake, store, and access linguistic information. This account is also referred to as the generalized slowing hypothesis (e.g., Miller, Kail, Leonard, and Tomblin, 2001). Leonard (1998) proposes that the surface hypothesis, together with the generalized slowing hypothesis, could potentially explain some uneven developmental profiles: the morphemes that show extremely protracted acquisition in affected children, like tense morphemes in English, would be those that are phonetically less salient.

The third account, called the Computational Complexity Hypothesis (CCH), makes use of a measure of complexity based on the number of computations involved in the production or comprehension of grammatical structures. Structures involving more computations are predicted to be acquired later than structures involving fewer computations. This prediction was confirmed in Jakubowicz and Nash's study (2001) on the acquisition of tense in French. Younger TD children performed better in the *présent* (simple present) (considered the least complex because it requires only the IP) compared to the *passé composé* (present perfect) which requires an additional functional projection, PASTP), and better in the *passé composé* than in *plus-que-parfait* (past perfect) which requires not only a PASTP projection but is computed in relation to the main event, which is in the *passé composé*. In this study, children with SLI performed well in present tense forms, but less well in the production of the *passé composé* and did not show any instances of *the plus-que-parfait*. This developmental pattern shown by the SLI children was qualitatively similar to that of TD children, but delayed. According to Jakubowicz

and Nash, these results suggest that the source of the deficit is in the performance systems.

1.3. Defining some acquisition problems

1.3.1. Adult immigrants and bilingualism

Not everyone who comes to the Netherlands as an adult succeeds in learning Dutch. Studies suggest that LESLLA learners (Low-Educated Second Language and Literacy learners) have more difficulty in acquiring a second language than highly educated adults (Strube, 2014; Van de Craats, 2009; Verhagen, 2009). Non-literate and semi-literate immigrants do not only have to learn the language, but often have to learn it with methods which are designed to teach literate people. So, the instructions are in Dutch, the language of which they have no command, and often in a written form with metalinguistic abstraction. Teachers and learners rarely achieve positive results using such methods.

1.3.2. Schooling and bilingualism

When entering school, at the age of four, bilingual children who learn Dutch sequentially often have a lower command of Dutch than their monolingual peers. This happens because bilingual children generally start acquiring Dutch at a later age than their monolingual peers. This is a problem for teachers and for children themselves, because these children's command of Dutch is not sufficient for them to be able to function properly at school. Children experience difficulties in several linguistic domains: vocabulary, sentence and text comprehension and production (Driessen, Van der Slik, and De Bot, 2002; Verhoeven and Vermeer, 1996, 1999). In fact, their limited vocabulary in Dutch, which is the main cause for their limited text comprehension, increasingly becomes a problem as they progress to higher grades in primary school and later to secondary school. Even though this often occurs among the third generation of bilinguals (leaving aside the fact that bilingualism is no new phenomenon in the Netherlands, since many native Dutch people are also bilingual, e.g. Frisian-Dutch, Low Saxon-Dutch, Limburg-Dutch), many teachers are not well equipped to deal with their pupils' bilingualism.

1.3.3. Specific Language Impairment and bilingualism

Bilingual children may, like their monolingual peers, suffer from specific language impairment. In general, SLI children are identified by parents or other family members, pediatricians, nursery school and school teachers and are referred to speech and language therapists or to audiology centers with multidisciplinary teams for diagnosis and therapy if necessary.

In the case of bilingual children, the identification of language problems is not as straightforward as for monolinguals, because most professionals do not know the languages of the children they are dealing with and often base their judgment on these children's command of Dutch and compare them with monolingual age peers, who, in most cases, have had more exposure to Dutch. The diagnostic process is cumbersome, because adequate diagnostic instruments for bilinguals are limited, and many professionals lack the necessary knowledge about bilingual language acquisition and language disorders in bilingual children. So, the risk of over and under diagnosis is high. This is probably the reason why in the Netherlands there is an overrepresentation of bilinguals in schools for children with severe language and speech problems, the so-called cluster 2 schools[4] (Smeets, Driessen, Elfering and Hovius (2009). De Jong, Çavuş and Baker (2010) mention that in the Netherlands, bilinguals constitute 14% of the mainstream school population, but 24% of those in special schools for children with SLI. One would expect the percentage of bilingual children to be identical between mainstream and special schools. This led Armon-Lotem and De Jong (2015) to the logical conclusion that there must be cases of overdiagnosis.

1.4. Previous Dutch studies

1.4.1. Studies on L1 and L2 acquisition of verbal morphosyntax in Dutch

The acquisition of Dutch by monolingual children has been extensively studied (see for an overview Gillis and De Houwer, 1998). Based on various studies, Wijnen (2000) and Blom (2003) proposed three developmental stages children go through in

[4] In the Netherlands, special education is subdivided into four categories according to the disability that needs attention. Specialised schools that provide education to children with SLI and other communication disorders fall under the so-called cluster 2.

their acquisition of Dutch verbal morphology. In the first stage, between about 18 and 24 months, children start off with the omission of finiteness. They mainly produce root infinitives (RIs) and sporadically stems and past participles at sentence-final position (cf. Bol, 1995; de Haan, 1986; Gillis, 2003; Jordens, 1990; Schaerlaekens and Gillis, 1987; Van Ginneken, 1917, 1992; Verhulst-Schlichting, 1985, Wijnen, 1995 a, b)[5]. Several researchers have observed that Dutch children use RIs to express wishes and desires: in other words, they have a modal meaning (Krämer, 1993; van Ginneken, 1917 and Wijnen, 1997).

The next stage, the *lexical-finiteness stage*, consists of two sub-stages (Wijnen, 2000; Blom, 2008). In the first substage, the lexical-finiteness markers emerge. These are auxiliary-like forms, such as *wil* ('want'), *moet* ('have to') or *ga* ('go'), that denote tense and modality (De Haan, 1987). This developmental (sub) stage is characterized by the appearance of a significant increase in the number of constructions with a single verb occurring in a left-peripheral, first or second position (Bol, 1995; Bol and Kuiken, 1988; Verhulst-Schlichting, 1985). Another characteristic of the first lexical-finiteness sub-stage is that there is no overlap in the position of early finite verbs and infinitival verbs (Blom, 2003, 2008; Blom and Wijnen, 2013; De Haan, 1987; Jordens, 1990). The finite verbs are mostly modals, aspectual verbs and copulas, whereas the non-finite verbs are lexical verbs that typically express activities. In the second sub-stage (around two and a half years of age), the lexical-finiteness markers are combined with an infinitive, which results in the appearance of periphrastic constructions of the type Aux+infinitive. At that time the use of RIs declines drastically (Bol, 1995; Wijnen, 1995a). The third stage is characterised by a gradual increase in adult-like grammatical finiteness.

Agreement is acquired between ages two and a half and five. First the 3rd person singular is used, often also to refer to the 1st and 2nd person singular. *Is* (be.PRESENT.3SG) is the first form of the copula *zijn* to be used (Verhulst-Schlichting, 1987).

Until recently, it was not clear at which age monolingual Dutch speaking children had acquired agreement. Up to the late eighties it was believed that four year-olds had command of agreement with the exception of the irregular forms (De Vleshauwer, 1986 in Schaerlaekens and Gilles, 1987). In the nineties some researchers (cf. Gillis and De Houwer, 1998; Wijnen and Verrips, 1998) questioned

[5] Children's development of verb phrase morphology displays a lot of inter-individual variation. Some children may start out using bare stems rather than what has been viewed as infinitives (Gillis, 1993).

this assumption, since there was no evidence from Dutch studies that the full paradigm for lexical verbs had been acquired by the time children were four years old. The arguments were the following: 1. Before this age, Dutch-speaking children hardly ever use plural and second person singular subjects; 2. The existing data analyses collapsed various verb categories, each of which with a specific paradigm (i.e. lexical verbs, modals, copulas and auxiliaries), making it difficult to decide whether children's errors were really agreement errors or errors in the categorisation of the verb they were inflecting (e.g. inflecting a third person singular lexical verb as a modal would lead to use of inflectional rules from the modal paradigm with lexical verbs, leading to omission of the suffix); 3. Another thing that hindered the decision whether or not children master agreement was that the singular forms are morphologically very much alike (and the crucial suffix is often omitted both in adults' and children's speech).

Polišenská (2010) has shed light on this issue. She examined the inflectional productivity in monolingual Dutch children between the ages of three and eight and came to the conclusion that three-year-old children have already mastered all finite morphemes. Polišenská's results indicated that three-year-old children correctly used subject verb agreement with nonce verbs above 90% of the time in three of the five conditions in that study and that they knew all finite morphemes equally well. Moreover, they understood that subject-verb agreement is obligatory. The very few errors that the three-year-olds made involved the 1st person and the 2nd person singular in inversion.

Parallel to learning agreement, children also develop the concepts of time and aspect. Some researchers consider understanding temporality and its expression as closely related to cognitive development (Schaerlaekens and Gillis, 1987). Others, such as Behrens (1993), state that cognitive development can explain the expansion of the temporal awareness, but is not necessarily the explanation for the order of acquisition of grammatical forms to express temporal reference. A thorough discussion of this issue goes beyond the scope of this introduction, but we will return to it in the discussion and conclusion sections of this thesis.

Tense is acquired relatively quickly. According to Tinbergen (1919), Schaerlaekens (1977), Schaerlaekens and Gillis (1987) and van Ginneken (1917), the first expansion of tense used by Dutch children is often the construction *gaan*+INF in the first half of the third year of life. The reading that children give to it is that of 'immediate or intentional future'. At this stage, children sometimes refer to the past, but without correct use of tense. Some bare past participles have been

evidenced around this age (cf. Bol and Kuiken, 1988; Bol, 1995; Extra, 1978; Jordens, 1990; Schaerlaekens, 1977; Schaerlaekens and Gilles, 1987; Tinbergen, 1919; Van Ginneken, 1917; Verhulst-Schlichting, 1985; Wijnen, 1995 a, b). This use of the past participle in early Dutch child language may be a form denoting past tense, although it seems more likely that it has the aspectual meaning of completeness (Jordens, 1990). When they start to use complex verb phrases around two and a half years of age, children start to use the present perfect, which in both child and adult Dutch is used to express past time reference. The simple past form of the copula is also used to express past time reference at this point. However, the simple past tense of lexical verbs occurs relatively late, most likely around age 3, on average (Verhulst-Schlichting, 1987; Bol and Kuiken, 1988).

It seems then that Dutch monolingual children expand their tense repertoire first by referring to the immediate future and the immediate past: the expression of the intention to do something or the description of the results of events that started in the past and are still seen or felt at the moment of speaking. Only later on do they refer to the remote past or remote future. This order of acquisition was attested in various languages and probably reflects the gradual expansion of the temporal awareness of the child (Decroly and Degand, 1913; Ferreiro, 1971; Grégoire, 1947; Stern and Stern, 1907; Verhulst-Schlichting, 1985).

Studies on the acquisition of Dutch morphosyntax by bilingual children and adults reveal that verb inflection and placement do not seem to be difficult for typically developing children. Blom's (2008) study revealed that four and five year old L2 children with one to two years of exposure to Dutch, already performed well on a verb placement task. Accuracy rates in main clauses were high (>90%) and accuracy rates in inverted and embedded clauses were around 80%. And as Orgassa (2009:160) states, 'Three to four years of input seemed to be enough in the unimpaired L1 and L2 children to perform at 90% accuracy in finite verb inflection and verb placement '. Adults, on the other hand, seem to have more difficulty with finite verb inflection and finite verb placement, and produce different error types from those produced by children (e.g., Blom, 2008; Blom and De Korte, 2008; Blom, Polišenská, and Weerman, 2007; Cornips, Van der Hoek and Verwer, 2006; Weerman, Bishop, and Punt, 2006). Blom's study (2008) revealed that most L2 adults (Turkish and Moroccan) did not differentiate between finite and non-finite verb forms resulting in the production of non-finite forms in finite positions: an error that children hardly make. Furthermore, adult L2 learners had difficulty with 2sg and 3sg forms, irrespective of their L1. It is hypothesized that errors with 2sg and

3sg are influenced by age (Blom, 2008) or by L2 proficiency level (Blom, 2008; Blom et al., 2007). In those two studies groups of child L2 and adult L2 learners with the same low to moderate levels of L2 proficiency were compared. The results revealed that it is only low to moderate proficiency adult L2 learners who substitute *–en* in finite position. High proficiency adult L2 learners, just as L1 and L2 children, did not use *–en* suffix in finite position. This can be taken as evidence that, in the initial stages of language acquisition, adult and child learners have a different morphosyntactic specification of *–en*.

In Blom's (2008) study adult L2 learners extensively overused the main clause order without inversion in contexts where inversion was required. L1 and L2 children produced correct word orders from early on.

Two explanations have been proposed for the difficulties with verb placement experienced by adult L2 learners: one explanation is that clear effects of age are found in the (late) L2 acquisition of grammar and that those learners use an SVX template irrespective of the L1 or tested word order conditions (cf. Meisel, Clahsen and Pienemann, 1981). Another explanation for word order errors maintains that the overuse of a certain word order might be the result of L1 transfer. Blom's (2008) results show that Turkish adults are more accurate than Moroccan adults with embedded clauses. That finding could, indeed, be interpreted in terms of L1 transfer. Turkish is a language with an underlying OV order and, hence, the overuse of that order in Dutch, in other contexts than that of embedded clauses, might be the result of L1 transfer. The Moroccan-Arabic and Tarifiyt L2 learners performed relatively well in main clauses without inversion (SVO). This is the basic word order of Moroccan-Arabic, their L1 or L2 (many Tarifiyt speakers had Moroccan-Arabic as L2). This observation of L1 transfer of word order is in line with earlier findings that show that, in the initial stages, L2 speakers with an underlying OV language as L1, such as Turkish, Korean or Japanese, start out with OV orders, whereas speakers of VO languages like Moroccan-Arabic or Spanish show initial use of the VO orders in L2 Dutch (e.g., Jansen, Lalleman and Muysken, 1981) and L2 German (e.g., Meisel et al., 1981; Vainikka and Young-Scholten, 1994).

Dietrich, Klein and Noyau's (1995) and Klein and Perdue's (1997) studies show that adult L2 learners of Dutch initially did not use finiteness marking to express temporality, but instead used a small set of temporal adverbials and the principle of chronological order (i.e., the order of mention corresponds to the order of events in time). They developed a system, called 'basic variety', in which semantic and pragmatic constraints determine how the information in a sentence is organized.

Much later, they started to mark temporality by means of finite lexical verbs and auxiliary verbs.

Starren (2001), who also studied the same data as Klein et al. (1995), came, likewise, to the conclusion that learners at the initial stages of acquisition use adverbials to mark tense and aspect. Moreover, Starren's results showed that the placement of adverbials within a sentence is determined by scope marking in early L2 acquisition: beginners place temporal adverbials adjacent to the elements in the sentence that they semantically affect. For those learners who acquired morphosyntactic finiteness marking (not all of them did), Starren found that they went through a stage at which they produced *proto-copula* and *proto-auxiliary forms*. The *proto-copula* is placed in topic position and marks tense, while the proto-auxiliary appears close to the predicate and marks aspect. This semantic interpretation of the proto-copula and proto-auxiliaries has been contested by Van de Craats (2009) who observed in her data that many *is*-patterns (in Starren's terms, *proto-copula*) are linked to thematic verbs without explicitly expressing durativity or perfect aspect. Giving an example from her own data, she argues that if Starren's interpretation is right, one would expect a learner who in Cycle 1 produced the sentence *papa is niet komen* (lit. 'daddy is not come.INF') to say *papa is niet gekomen* (lit. 'daddy has not come.PPART'*)* at a more advanced stage. However, in Cycle 2, the same learner, in the same task, produced the short form *kom* (which can be a stem or 1SG) in the position of the infinitive: *papa is niet kom* (lit. 'daddy is not come.STEM'), in which a present tense with the inflected verb (be.3SG) before the negator is produced. The same learner produced a finite verb in sentence-initial position in Cycle 3 when she said *kom niet die vader* (lit. 'come-STEM not that father'), contrary to Starren's predictions (The last step is morphological – that is, the production of the correct form *komt*.3SG). Van de Craats concludes that the form 'is' behaves like an auxiliary carrying inflection rather than an auxiliary of aspect. As she puts it 'The *is*-patterns, which both L1 and L2 learners of Germanic languages like Dutch, German, and English produce, point to a shared use of a UG-constrained pattern for the shared problems with verb movement.'

1.4.2. Studies on L1 and L2 acquisition of verbal morphosyntax in Dutch by SLI children

In many languages[6], including Dutch, verbal morphosyntax is one of the most difficult aspects of grammar for children with Specific Language Impairments to acquire (Bol and Kuiken, 1988, 1990; De Jong, 1999; Verhoeven, Steenge and Van Balkom, 2011; Wexler, Schaeffer and Bol, 2004; Zwitserlood, 2015; Zwitserlood, Van Weerdenburg, Verhoeven and Wijnen, 2015).

De Jong (1999) found that children with SLI produced significantly more subject-verb agreement errors featuring verb stem form than did TD children. They also used a singular verb inflection with a plural subject or an infinitival form in sentence final position and fewer past tense forms when compared to younger TD children. Omission and substitution of inflections occurred and sometimes the entire verb was omitted. In addition children with SLI frequently used dummy auxiliaries.

Wexler, Schaeffer and Bol (2004) studied the Bol and Kuiken corpus (1990) and found that SLI children hardly ever violate the verb-second rule, but they also found that older children with SLI (age range 6;0-8;2) still produced 15% root infinitives, whereas in TD children (age range 3;1-3;7) this rate had dropped to 7%.

Zwitserlood (2015) reports that the most errors produced by SLI children are: *omission* and *substitution* of inflection and incorrect word order.

Studies on SLI children learning Dutch as a second language reveal that they experience the same morphosyntactic problems as Dutch monolingual SLI children (Orgassa, 2009; Steenge, 2006; Verhoeven, Steenge, and van Balkom, 2011). Verb inflection, verb placement in sentences with inversion and agreement of definite determiner and noun are vulnerable.

Steenge (2006) carried out the first study on bilingual children with SLI in the Netherlands. She compared the language proficiency of L2-SLI children to that of three other groups of children: monolingual children with typical language development (L1-TD), monolingual children with SLI (L1-SLI), and bilingual children with typical language development (L2-TD). The children in her study were of Turkish, Moroccan, and Surinamese origin. Steenge came to the conclusion that L2-SLI children (in the 6 to 8 year age range) are additionally disadvantaged, as far

[6] Verb morphology has been observed to be problematic for SLI children speaking languages such as English (e.g., Fletcher and Ingham, 1995), German (Clahsen, 1989), Italian (e.g., Bortolini, Caselli, and Leonard, 1997), French (e.g. Paradis and Crago, 2000), Swedish (e.g. Hansson, Nettelbaldt, and Leonard, 2000), and Hebrew (e.g. Dromi, Leonard, Adam, and Zadunaisky-Ehrlich, 1999).

as the L2 is concerned, for linguistic skills in the domains of lexicon and morphosyntax. They exhibit delayed language acquisition due to the language disorder on the one hand and to limited contact with the L2 on the other. Comparison of morphosyntactic skills, more specifically Dutch verb morphology, among the four groups of children, this time with L2-SLI children ranging from 7 to 9 years, revealed one error that according to Steenge, may function as a clinical marker, namely: the omission of an agreement marker in the third person singular verb form. No other SLI specific errors were found.

The second study in the Netherlands that addressed the question as to what extent SLI and learning an L2 affect the acquisition of grammar, and how both situations affect language acquisition in a single L2-SLI child, was that of Orgassa (2009). She compared a group of L2-SLI children with groups of L1-SLI children, unimpaired L2 and L1 children and a group of adult L2 Learners. Her experiments centered on the application of morphosyntactic rules in Dutch that were considered vulnerable in SLI and L2 acquisition. Those were (1) subject-verb agreement in various word order conditions and (2) agreement as marked on definite determiner and attributive adjectives. SLI effects were found across both grammatical domains, whereas L2 effects were visible only in the domain involving knowledge of gender agreement. In the domain of verb inflection and verb placement the L1-SLI children's group did not perform significantly better than the L2-SLI children's group.

Orgassa (2009) came to the conclusion that the similarities in error patterns across the impaired and unimpaired children's groups indicate that all children rely on the same linguistic resources to derive grammar. The difference in the pace of acquisition and, hence, delay in some children's groups are best understood in terms of factors that influence input and intake in SLI and L2. Only with definite determiners do adult L2 and child learners produce the same type of error. Since the errors are the same in impaired and unimpaired acquisition there is no reason to assume that the SLI children have a representation deficit in this domain. Furthermore both SLI groups performed relatively well in verb placement and verb inflection (at 75% correct and higher), providing additional evidence that the representation of rules is unaffected.

1.5. The present study

1.5.1. The linguistic phenomenon being studied

Dummy auxiliaries are commonly defined as semantically empty verb forms that, in a Dutch main sentence, occur in the same position - this is the second position - occupied by the lexical verb in native adult language and occur in combination with a nonfinite lexical verb that occupies the final position in the sentence (Barbiers, 2013). This is exemplified in (1).

(1) *Pingu* *is/gaat/doet* *drink-en*
Pingu be/go/do.PRES.3SG drink-INF
'Pingu drinks' or 'Pingu is drinking.'

In the construction in (1) the verbs *zijn* ('be') *gaan* ('go'), and *doen* ('do') are said to be semantically empty, because they do not carry any meaning. The attested utterances refer to the ongoing action of drinking. *Gaan* does not express prospective aspect, as is the case in Dutch spoken by adult native speakers, and *zijn* and *doen* are not used in standard Dutch in such a construction.

Various constructions can be used by adult native Dutch speakers to express the same as in (1). These are given in (2a) - (2c).

(2) a *Hij* *drink-t*
He drink-PRES.3SG
b Hij is aan het drink-en
He be.PRES.3SG on the drink-INF
c Hij staa-t te drink-en
He stand-PRES.3SG PREP drink-INF

All the examples in (2) express imperfective aspect[7], but the construction in (2b) puts the focus on the ongoingness of the event, and (2c) makes clear what the posture of the subject was while performing the action. However, grammaticalization of these posture verbs has led to the loss of their original meaning. Utterances like *Hij zit te drinken* (He sits to drink; 'He is drinking') are common in Dutch, even though *zitten* ('sit'), in this context, does not necessarily mean that the person actually sat while drinking.

[7] 2a may also have a generic or habitual reading such as in 'he is a drinker'.

Dummy auxiliaries have been observed not only in the learner varieties of adults and children learning Dutch, but also in certain dialects and registers of Dutch. (Barbiers, 2013; Barbiers, Bennis, Boef, De Vogelaer, Van der Auwera and Van der Ham, 2008; Cornips, 2013). Barbiers' studies of Dutch dialects (2008; 2013) show that only a minority of Dutch dialects have dummy auxiliaries, and in most dialects in which dummy auxiliaries are used, they are used more in subject-initial main clauses, as for example *Jan doet water drinken* ('Jan is drinking water'), than in derivationally more complex constructions in which the dummy auxiliary is moved to the position before the subject, as is the case in Yes/No-questions, imperative clauses, and clauses with inversion, as for example *Nu doet Jan water* drinken ('Now Jan is drinking water').This finding is contradictory to that of Blom and De Korte (2011) who, on the basis of their study, concluded that it is conceivable that dialect speakers use dummy auxiliaries to reduce derivational complexity, as is the case with child learners of Dutch as a second language. According to Barbiers, it is implausible that dialect speakers use dummy auxiliaries to reduce derivational complexity. Moreover, dummy auxiliaries are regionally restricted: dummy *doen* is mainly used in the Southern Dutch provinces of Zeeland, Noord-Brabant and Limburg (though its use is spreading throughout the whole country), dummy *gaan* is used in West Flanders, dummy *hebben* occurs primarily in the provinces of Flemish Brabant, and Belgian Limburg and North Brabant, and 'dummy' *zijn* is used only in the absentive construction *zijn*+INF all over the country. Barbiers extends his arguments, by correctly stating that '... it is unlikely that speakers in a certain dialect area have a stronger preference for the reduction of derivational complexity than speakers in other dialect areas and speakers of Standard Dutch.' (Barbiers, 2013: 399). These facts led him to the conclusion that the syntactic properties of those dialectal dummy auxiliaries are different from their counterparts in L1 and DAL. So, the fact that dummy auxiliaries occur in the same position that, in a later phase of the L1, L2 and DAL development, is occupied by the finite verb, added to Barbier's suggestion that the syntactic properties of those dummy auxiliaries are different from their counterparts in Dutch dialects, leads us to the assumption that dummy auxiliaries in L1, L2 and DAL are associated with the acquisition of finiteness. The results of the present study will shed some light on this issue. The overarching research question that we want to answer is the following:

Are dummy auxiliaries devoid of meaning and used by learners of Dutch as a structural step towards the acquisition of finiteness?

In other words, we want to find out whether dummy auxiliaries are predecessors of movement of the lexical verb, as claimed by researchers such as De Jong et al. (2013) and Van de Craats (2009).[8] In addition to an analysis of corpora of monolingual child language acquisition data, experiments were carried out with L1 and L2 children with SLI, typically developing L1 and L2 children and DAL adult learners with a low level of education. A comparison between these groups should answer our central research question by establishing whether there are similarities and differences among them in their comprehension and use of dummy auxiliaries prior to acquiring finiteness in Dutch.

This study distinguishes itself from most previous research on this topic in various ways:

(i) Speakers of Tarifiyt, the L1 of approximately 60% of the Moroccan population living in the Netherlands (El Aissati et al., 2005), were distinguished from the Moroccan Arabic speakers. In most previous studies participants with these two distinct language backgrounds were grouped together;

(ii) Not only the production, but also the comprehension of (dummy) auxiliaries in Dutch was studied, providing, in this way, a broader and deeper insight into the issue than has been the case in most studies about this subject so far, with a few exceptions such as Zuckerman (2001; 2013) and Verhagen (2013);

(iii) The types of elicitation tasks included were more diverse than in most studies on this topic, allowing the observation of the phenomenon in different contexts;

(iv) The verbs used in this study were grouped according to their semantic (verb class) features. This permits investigating whether particular grammatical forms expressing tense and/or aspect occur with certain verb classes and whether these semantic features affect dummy auxiliary use;

(v) Both older and young bilingual children (from age four) were included, allowing clear perspectives on early and late phases of the Dutch language acquisition process by those children.

[8] For a description of the Dutch verbal syntax see section 1.7.2.

1.5.2. Theories explaining the use of dummy auxiliaries

Accounts offered to explain the observed use of dummy auxiliaries arise from two different interpretations of this phenomenon: (i) the structural view, in which it is claimed that dummy auxiliaries are primarily used to mark a syntactic position and to spell out grammatical features, and (ii) the functional accounts, in which it is assumed that semantic aspects of finiteness are acquired before their morphosyntactic features.

Structural accounts

Proponents of structural accounts claim that dummy auxiliaries in Dutch - which is a Verb Second language, a language in which the finite verb occupies the second place in the sentence - constitute a structural device that helps learners to create a position for finite verbs to move to and, as such, precede movement of the lexical verb. The insertion of a dummy auxiliary in a functional head can be seen as a strategy to reduce inflectional and derivational complexity. (Auxiliaries are assumed to be easier to access than lexical verbs (see Parodi, 2000) because, due to their high frequency, they are stored as whole forms in the mental lexicon and can be directly drawn from the lexicon in their complete inflected form and inserted in the position of a functional head. The production of lexical verbs in the same position, on the other hand, requires movement, which is considered a more difficult operation, of the verb from the position where the verb is base-generated to a functional head, where tense and agreement features are checked. Depending on the theoretical approach adopted, this position is in C (Den Besten, 1989; Koster, 1975) or in I (AGR/T) (Blom and De Korte, 2008 and 2011; Zwart, 1997).

Functional accounts

Researchers such as Dimroth, Gretsch, Jordens, Perdue and Starren (2003), Jordens and Dimroth (2006), Starren (2001), and Verhagen (2009) offer a semantic account for the use of *zijn*+INF and *gaan*+INF in Dutch language acquisition. They assume that (dummy) auxiliaries, just as modals, are carriers of the morphological properties of finiteness and have the illocutionary function of assertion. According to proponents of the semantic view, it is only after the acquisition of auxiliaries of tense (for Dutch: *hebben* ('to have') and *zijn* ('to be') - through which learners understand that finite verbs behave differently from non-finite verbs - that verb movement and subject-verb agreement is acquired. At this stage the learner acquires

a sense of the semantic difference between a particular aux+INF pattern and its corresponding V-finite alternative.

1.5.3. Theoretical value of this study

The ability to express temporal circumstances and properties of events plays an important role in communication. A study such as the present one, in which the acquisition of temporality in adult learners as well as monolingual and bilingual children with and without SLI is investigated, is useful for gaining a greater understanding of the mechanisms underlying language acquisition. As Lee (2001: 592) states 'The research on the development of temporal reference by learners of L1 and L2 can potentially contribute in significant ways to our understanding of the processes of language acquisition, particularly as we search for the universality of language acquisition through cross-linguistic comparisons.'

Hopefully, the present study will contribute to the ongoing theoretical debate over some unresolved issues as for instance that of age dependencies[9] on grammatical rule learning, or that as to whether SLI, and thus also (L2-)SLI, is caused by linguistic representational deficits, limitations in intake or deficits in the performance systems (see 1.2).

The representational account presupposes that SLI children's difficulties in language learning are caused by missing or deficient knowledge of how to access the underlying representation of rules. It can then be speculated that children with SLI and adult DAL learners – the latter group, due to a critical period (see footnote 9) for language acquisition (Lenneberg, 1967) - would have to rely on other learning mechanisms to build up grammar than typically developing children. The latter are thought to have an innate domain-specific language faculty (Bley-Vroman, 1990). One such learning mechanism is the declarative memory, which is responsible for storing chunks and formulae. The assumption is that procedural memory, which is assumed to support rule-governed computations in language, is inefficient after the critical period (Ullman, 2001). In addition, Bley-Vroman (1990) claims that in adults the Language Acquisition Device (LAD)[10] ceases to operate and that adult

[9] This refers to the idea that there is a period of time, early in life, called 'the critical period', during which children display a heightened sensitivity to learning languages. After this period, there is a non-linear decline in sensitivity and the chances of developing the same language abilities as young children are reduced.

[10] First proposed by Noam Chomsky in the 1960s, the LAD concept is an instinctive mental capacity humans are born with and which enables an infant to acquire and produce language effortlessly.

language learning is guided by general human cognitive learning capacities. In other words, adults apply knowledge of first language and problem-solving strategies to learn a second language. As Bley-Vroman states (1990: 22), 'A variety of mechanisms must clearly be available, including distributional analysis, analogy, hypothesis formation and testing.

Based on the premise that the underlying representation of rules is inaccessible to both SLI and adult AL acquisition, language acquisition should be similar in those two groups and hence different from typical child L1 and L2 acquisition. If, on the other hand, SLI and adult language acquisition are caused by reduced input – in the case of SLI children due to reduced processing, perceptual capacities or deficits in accessing and integrating information, and in the case of the adults due to lack of sufficient exposure to the target language - then children with SLI and adult AL learners would in principle have access to the same type of knowledge as typically developing children: the consequence being that error patterns would be alike. The only difference would be the pace with which language is acquired.

In addition, by investigating not only the use but also the comprehension of dummy auxiliaries by different groups of learners, and by examining individual variation, we hope to learn more about the similarities and differences in the process of acquiring Dutch. This may in turn help in the theory formation about the processes and mechanisms underlying language acquisition.

1.5.4. Practical value of this study

Important steps have been taken by earlier studies on bilingualism. Those studies have revealed that verb inflection and placement are not difficult for typically developing children, but seem to be problematic for adult DAL learners and children with SLI. Examples of difficulties mentioned in the literature regarding Dutch language development are marking verbs for past tense, and agreement between subject and verb. However, some important questions still remain unanswered. One such question is whether the use of dummy auxiliaries itself, which has been identified by various researchers, can be seen as a marker of SLI. That is, do typically developing children (L1 and L2) differ significantly from children with SLI (L1 and L2) in their use of dummy auxiliaries, so that this can be used in the diagnosis of SLI? One other question concerns the teaching of finiteness in Dutch to LESLLA learners (see footnote 1) and to L2-SLI children. Can knowledge of which dummy auxiliaries are used by these learners, and why they use them, help to

improve language instruction methods, so that they can acquire Dutch in an easier and quicker manner?

As mentioned before, adult DAL learners, particularly those with low education and low-literacy skills, struggle to overcome certain difficulties with Dutch morphosyntax, but teachers seldom succeed in helping them gain command of Dutch. Similarly, speech and language therapists, clinical linguists and other professionals have difficulty in diagnosing language impairment in bilingual children, because knowledge of bilingual language acquisition and language disorders in bilingual children, and adequate diagnostic instruments for bilinguals are limited. The present study aims to contribute to reducing some of these problems. Knowledge of the steps bilingual children, with and without SLI, go through when acquiring finiteness, and a better understanding of the use of dummy auxiliaries by different kinds of learners, may enable the design of more effective methods of language teaching, of assessment and treatment. Moreover, teachers who acquire this knowledge are more capable of understanding and helping their students, and professionals responsible for diagnosing and treating language impairment will do so more accurately if they understand how children learn the intricacies of Dutch verb inflection and verb placement, and what the role of dummy auxiliaries is in that process.

1.6. Design of the study

In order to reduce heterogeneity and be able to compare the groups, all participant groups were selected according to predefined criteria. The L2 groups in this study had one of the following three languages as L1: Turkish, Moroccan Arabic or Tarifiyt (a Berber language spoken in northern Morocco); the L1 group were children whose parents spoke only standard Dutch with them and not a dialect; and all groups were tested using the same methodological design.

1.6.1. The experiments

Four experiments - three production experiments and one comprehension experiment - were used in this study. Table 1-1 lists them.

All of these experiments elicited the third person singular. The multiple choice comprehension task and the narrative task were designed to test whether the participants ascribe aspectual meaning to the constructions *zijn*+INF and *gaan*+INF.

The tasks consisted of watching film clips, each followed by three pictures extracted from the film in question, which were presented on the screen immediately after the film. The first picture shows the image one fraction before the beginning of an action or state, the second picture shows the action or state itself and the third picture shows the end of the action/state.

The completion task 'Syntax' (see 3a and 3b in Table 1-1) was designed in order to answer the question whether the number of dummy auxiliaries produced increases as the number of syntactic steps increases, thus increasing computational demands, required to get an inverted (XVS) order.

Table 1-1. The experiments in this study

Experiment	Type of task	Mode	Number of items
1	Multiple choice (meaning interpretation)	Comprehension	
	(a) prospective		19
	(b) imperfective		18
	(c) dummy		19
2	Narrative (meaning)	Production	
	(a) prospective		16
	(b) imperfective		16
	(c) perfect		16
3	Completion syntax	Production	
	(a) no-inversion order (SV)		23
	(b) inversion order (XVS)		24
4	Completion morphology	Production	
	(a) present tense		34
	(b) past tense		34

The sentence completion tasks 'Present tense' and 'Past tense' (see 4a and 4b in Table 1-1) were designed to investigate the relationship between morphological skills (inflection) and the use of dummy auxiliaries.

1.6.2. Materials

The verbs used in the experiments were divided into four classes which were distinguished from one another based on semantic aspects such as their durative nature, argument structure and the possible presence of an adverbial or an object in the sentence signaling an endpoint to the action or state. Vendler's (1957) four-way classification formed the basis for the classification of the verbs used in the study.

The same verbs were also grouped on the basis of the following morphological characteristics: regularity and presence of a verbal particle (see appendix 1).

Short clips and pictures taken from the television series *Pingu* were used.[11] The series of Pingu films was chosen because it has themes to which children and adults from different cultures can relate. Since the study involved adults as well as children of different ages, it was important to choose materials which would appeal to both groups. The characters in the Pingu series are appealing and amusing to a wide range of ages. Another important reason for choosing the Pingu series is that the language used is an invented "penguin language" mainly consisting of loud, repetitive honking noises. The simplicity and transparency of the film clips, and the fact that they lack any reference to a specific spoken language, ensured that all the participants could easily understand the films.

1.7. Markers of temporality

In the studies reported in this thesis the temporal framework of Klein, named Basic Time Structure (1994), was adopted because it is a language-neutral framework, which permits not only cross-linguistic comparisons, but also allows for comparisons of learners' varieties. Furthermore, this framework makes it possible to account for the interplay between morphosyntactic (i.e., auxiliaries and affixes) and lexical (temporal adverbials and verb characteristics) means.

Klein's framework consists of three parameters: (1) the topic time (TT), (2) the time of utterance (TU), and (3) the time of situation (TSit). The TT is the time span in the past, present, or future for which an assertion is made in a given utterance. The temporal relation between the TT and the TU gives past, present, or future tense. The relation between the time for which an assertion is made (TT) and the time at which a situation occurs (TSit) is referred to as aspect. As illustrated in (3), based on Klein (1994:108), TT can contain TSit (3a), it can be partly or fully contained in it (3b), it can follow it (3c') or it can precede TSit (3c''). For explanatory ease, the examples given here are taken from English. In section 1.7.1 examples will be provided from the languages involved in the present study.

[11] Pingu is a British-Swiss stop-motion clay animated television series created by Otmar Gutmann. The series centres on a family of anthropomorphic penguins living in an igloo at the South Pole. The main character is the family's son and title character, Pingu, who frequently goes on adventures with his little sister, Pinga, and often gets into mischief with his best friend, Robby the Seal.

(3)	a	TT	incl	TSit	imperfective	(He is sleeping)
	b	TT	at	TSit	perfective	(He slept)
	c’	TT	ex (after)	TSit	perfect	(He has slept)
	c’’	TT	ex (before)	TSit	prospective	(He is going to sleep)

The notions of pre- and post time introduced in (4) will clarify the definition of the various aspects presented in (3). The notion of pre-time (the time before the situation) plays a crucial role in the definition of prospective and imperfective, and the notion of post time (the time after the situation) plays a role in the definition of perfective as well as of perfect aspect. Consider a time line as in (4) – (7), where ---------- represents the lexical content (sleep) and [TT] the topic time:

(4) *He is going to sleep*

[TT]

Pre time _____ { TSit } Post time

In this case (4), TT is excluded from TSit, and it is in the pretime of the situation. This is the PROSPECTIVE aspect.

(5) *He is sleeping*

____ [TT] ____

Pre time { TSit } Post time

In this case (5), TT is interpreted as fully included in TSit. It is the IMPERFECTIVE aspect.

(6) *He has slept*

____ [TT] ____

Pre time { TSit } Post time

In example (6) TT is excluded from TSit situation and is placed in its post time. Here, the action of sleeping has ended before TT is reached. This is the PERFECT aspect. It refers to the result of an action or to the present relevance of the accomplished action. In many languages, the perfect may be used when the present relevance of the past situation referred to is simply one of temporal closeness, meaning, the past situation is very recent. In this case TT includes the present, and TSit is close to it.

(7) *He slept*

_____ [TT] ____

Pre time { TSit } Post time

Here (7), TT is partly included in TSit. The act of sleeping is shown to be completed within TT, and it has no relevance to the present. This is the PERFECTIVE aspect.

Temporality is marked not only through tense and aspect markers, but also through lexical means such as temporal adverbials, temporal particles, compound temporal expressions, and through inherent temporal characteristics of the verb and its arguments.

From all the above it can be concluded that morphosyntactic and lexical means interact to express temporality. Temporal adverbials serve to specify the topic time or the time of the situation, but they do not have the same unambiguity as grammatical tense and aspectual markers. This implies that learners' varieties have to evolve from a phase in which temporality is mainly expressed by adverbials and other lexical means, to a phase in which they grammaticalize. According to Starren (2001) a lot of learners 'fossilize' at a basic level in which they use temporal adverbials and do not develop morphosyntactic tense and aspect marking.

1.7.1. Markers of temporality in the languages in this study

In order to be able to account for possible L1 interference, and/or influence of the target language itself on learners' comprehension and production of the structures in question, relevant markers of temporality in the languages involved are presented in Table 1-2. The following aspectual distinctions will be considered: prospective, imperfective, perfect and perfective.

As can be seen from Table 1-2, Dutch has multiple ways of expressing imperfective aspect and Tarifiyt has different forms to express prospective. Turkish uses synthetic forms, whereas the other three languages often make use of analytic forms to express the temporal aspects pertinent to the present study. In Tarifiyt and Moroccan Arabic perfect and perfective aspects are each expressed with a different form, whereas Turkish has only one form for both aspects. Dutch is peculiar in that it has two forms to express perfective aspect, one of them being the same as the form used to express perfect aspect. That is, both simple past and present perfect can be used to express perfective aspect.

Table 1-2. Markers of temporality in Dutch, Tarifiyt, Moroccan-Arabic and Turkish

Basic order	**Prospective**	**Imperfective**	**Perfect**	**Perfective**
Dutch (SOV)	*gaan*+INF	• zijn+aan het+inf • present tense • posture verbs+INF	*zijn/hebben* +PPART	• simple past • *zijn/hebben* +PPART
Tarifiyt (VSO)	• ad+AOR • traḥ+ad/ġa+AOR • qa+traḥ+ad/ġa +AOR	*qa*+IMPRF	*qa*+PRF	PRF
Moroccan Arabic (SVO)	*ġādi*+IMPRF	*ka (ta)*+IMPRF	active PART	PRF
Turkish (SOV)	stem+ -(y)acak/ ecek	stem + *-yor*	stem + *-DI*	stem + *-DI*

Note: AOR = aorist; IMPRF = imperfect; INF=infinitive; O = object; PPART = past participle; PRF = perfect; S = subject; V = verb.

Examples of expression of aspect in the various languages

Tarifiyt

Several Berber languages are spoken in Morocco. The description below applies to Tarifiyt. The canonical word order in Tarifiyt is VSO. Sentences with SVO (and OVS) are meant to put the focus on the subject (SVO) (or the object -OVS) (McClelland, 1996; El Aissati, 1997 and 2001 in E-Rramdani, 2003). It has a rich inflectional system, and is a pro-drop language.

Prospective aspect. This aspect is formed by placing the particle *ad* before the lexical verb in the aorist[12]. Example (8) illustrates this.

(8)	*ad*	*tt*	*t-emmelqi-d.*	
	PART	her	2-meet.AOR-SG	
	'You will meet her.'			(El Aissati, 1994:45)

The near future can be formed by preceding the particle *ad* by the verb *traḥ* ('go') in the imperfective, as exemplified in (9). This *traḥ*-construction can also be preceded by the particle *qa,* which can be considered a stance marker expressing the relevance of the impending action at the moment of speaking. This is exemplified in (10).

[12] This particle is often shortened as *a.* In some syntactic environments, it can be replaced by the allomorph *ġa.*

(9) *traḥeġ* *ad* *swe-ġ.*
1.go.IMPRF.SG PART 1.drink.AOR-SG
'I am going to drink.'

(10) *qa* *traḥeġ* *ad* *sweġ.*
PART 1.go.IMPRF.SG PART 1.drink.AOR.SG
'(now) I am going to drink.'

Imperfective aspect. The particle *qa* is often used before the lexical verb in the imperfective to express that the action being described is ongoing and therefore relevant for the moment of speaking. An example is given in (11).

(11) *qa* *sesse* *-ġ.*
PART 1.drink.IMPRF -SG
'I am drinking.'

Perfect aspect. This aspect is expressed by means of the particle *qa*, which, as said before, expresses the relevance of the action for the moment of speaking, followed by the lexical verb in the perfective. This is exemplified in (12).

(12) *qa* *s-wi* *-ġ.*
PART 1-drink.PRF -SG
I have (just) drunk.'

Perfective aspect. This aspect is expressed by the lexical verb in the perfective. Example (13) shows this.

(13) *Nettat* *t* *-eswa.*
she 3SG.FEM -drink.PRF
'she drank.'

Moroccan Arabic

The basic word order in Moroccan Arabic is SVO (Harrell, 1962). Moroccan Arabic has a rich inflectional system, and is a pro-drop language. The conjugations consist of the base form (the third person singular masculine of the perfect) combined with one or more inflectional affixes. There are basically two verbal conjugations: the prefixed form which indicates an uncompleted action or situation (imperfective), and the suffixed form, denoting a completed action or situation (perfective). These inflected verb forms often combine with the auxiliaries *kān* ('be') and *ġādi* ('go'),

and with verbs indicating onset, cessation, and continuation such as *bda* ('begin') and *bqa* ('remain').

Prospective aspect. The prospective aspect is formed by placing the auxiliary *ġadi* ('go') before the base form of the imperfect[13]. An example is given in (14):

(14) *Ġadi/ġa* *ne* *-qra.*
go.FUT 1SG -read.IMPRF
'I am going to read.'

Imperfective aspect. The most common way of expressing ongoingness in Moroccan Arabic is by placing the durative particle *ka* before the base form of the lexical verb preceded by the prefix for the imperfect.[14] The following example illustrates this:

(15) *Huwa* *ka* *-y* *-šreb.*
He PART -3SG -drink.IMPRF
'He is drinking.'

Perfect aspect. The expression of a current state brought about by a previous action is expressed by the active participle. In this respect it contrasts with the perfective, which indicates only a previous action with no reference as to current relevance.' Compare examples (16) and (17):

(16) *Ana* *kateb* *lih* *"felfel".*
I write.ACTIVE.PART on it 'pepper'
'I've written "pepper" on it.' (E.g. a label on a drawer, the label is still there)
(Harrell, 1962: 179)

Perfective aspect. The perfective aspect is expressed by the perfective, as illustrated in the following example:

(17) *Ana* *kteb-t* *lih* *"felfel".*
I write.PRF-1SG on it 'pepper'
'I wrote "pepper" on it.' (Perhaps the label is no longer there.)
(Harrell, 1962: 179)

[13] In conversational speech, *ġadi*, is often shortened to *ġad* or even *ġa*.
[14] Many Moroccans use the prefix *ta-* instead of *ka-*.

Turkish

The unmarked word order is SOV (Göksel and Kerslake, 2005). For reasons of stress, it is possible to deviate from the canonical word order in main clauses, and move the verb leftwards (e.g. SVO, OVS, VSO, etc.). Turkish is a pro-drop language, and its morphology is characterized by agglutination, which means that words consist of roots or stems to which suffixes marking negation, agreement, case, mood, aspect, and tense are attached. Auxiliary and modal verbs are incorporated in the main verb complex by means of suffixation, and therefore, in contrast to Dutch, Moroccan- Arabic and Tarifiyt, they mostly appear at the end of the sentence.

*Prospective aspect. Future and n*ear future are expressed with the suffix -(y)AcAK added to the stem of the lexical verb before the person and number features. Example (18) illustrates this:

(18) *Ben* *şimdi* *uyuy-acağ-ım.*
I now sleep-FUT-1SG
'I am going to sleep now.'

Imperfective aspect. Ongoingness is expressed by putting the suffix *-(I)yor* after the stem. This is illustrated in (19):

(19) *Su* *iç-(i)yor-um.*
Water drink-IMPRF-1SG
'I am drinking water.'

Perfective and perfect aspects. Both aspects are expressed by means of the suffix –DI. In (20) an example is given of the perfective aspect, and (21) illustrates the perfect aspect in which finishing drinking the milk is a (present) result of having started to drink it as expressed by the preceding utterance *Burda Hülya süt iç-i-yor (*'Here Hülya is drinking milk.').

(20) *Hülya* *dün* *çok* *uyu-du.*
Hülya yesterday a lot sleep-PRF.3SG
'Yesterday Hülya slept a lot.'

(21) *Hülya* *şimdi* *sütü* *iç-ti.*
Hülya now milk drink-PRF.3SG
…Now she has drunk milk.'

Since the present study concerns the acquisition of finiteness in Dutch, a more detailed description of this language is given below.

1.7.2. Finiteness in Dutch

In Dutch main clauses the finite verb occupies the second position, irrespective of which constituent occupies the first position. This property is known as Verb Second (V2). In the standard generative analysis (see Den Besten, 1989; Koster, 1975), the V2 order is derived from an underlying structure in which the verb is in head-final position within the Verb Phrase (VP). Through head-to-head movement from verb (V) to Inflection (I), the finite verb ends up in the complementizer (C) position. If a constituent other than the subject is moved to the Spec, C position, the result of this movement is that the finite verb and the subject switch places (subject-verb inversion). According to the more traditional analysis, main clauses with and without inversion do not differ in derivational complexity, because movement is invariable from V (head-final position) to C. A more recent minimalist proposal with a strict head-initial structure holds that movement to C is variable (Zwart, 2011). Assuming that I is split into Agreement (AGR) and Tense (T), it is argued that the verb moves up to C, via left-headed AGR and T only in main clauses when the specifier position of CP is filled by another syntactic element than the subject (which remains in Spec, AGR). In main clauses without inversion the verb remains below C, namely in AGR head.

Dutch has a two-way system - past and non-past – to grammaticalize tense. Aspect is often expressed through auxiliaries and constructions with a posture verb or with the prepositional phrase *aan het V ('on the V')*, where V stands for a verb in infinitival form. The aspectual auxiliary (often with a reduced inflectional paradigm, one form for singular and one for plural) occupies the second position and the lexical verb, in the infinitive, a sentence-final position. Dutch has a poor inflectional system: The marker of the first person singular is a null morpheme. This form cannot be distinguished from the verb stem. The second and third person are marked by <t> (except when the second person singular (2SG) subject follows the verb; in these situations, a null form is used), and the plural marker is <en>. These plural forms cannot be distinguished from the infinitive.

Prospective aspect. Near future is commonly expressed with the auxiliary *gaan* in the present tense, in combination with the lexical verb in the infinitive. This is illustrated in (22):

(22) *Jan* *gaa-t* *zijn vriend roepen*
Jan go-PRES.3SG his friend call.INF
'Jan is going to call his friend.'

Imperfective aspect. The simple present tense, as well as posture verb constructions and constructions with an adjective or a preposition, can be used to describe an ongoing event. In (23a) - (23e) examples are given of each of these constructions:

(23) a Simple present
Moeder *bouw-t* *een toren*
Mother build-PRES.3SG a tower
'Mother builds / is building a tower.'

b Zijn + aan het + INF (be + on the + INF)
Zij *is* *een toren* *aan het* *bouw-en*
She be.PRES.3SG a tower at the build-INF
'She is (in the process of) building a tower.'

c Zitten / staan / liggen + te + INF (Sit / stand / lay down + to + INF)
Zij *staa-t* *een toren* *te* *bouw-en*
She stand-PRES.3SG a tower to build-INF
'She is (standing) building a tower.'

d Bezig zijn + te + INF (to be busy + to + INF)
Zij *is* *bezig* *een toren* *te* *bouw-en*
She be.PRES.3SG busy a tower to build-INF
'She is busy building a tower.'

e Zijn + INF (be + INF)
Moeder *is* *werk-en*
Mother be.PRES.3SG work-INF
'Mother is (not here) working.'

Flecken's study (2011) reveals that the marked *aan het* VINF construction (23b) is widely used by adult Dutch native speakers, except when describing motion events with verbs like *gaan* ('go') or *rijden* ('drive').

The last construction (23e) is less frequent than the other constructions. It has the restricted meaning of somebody doing something not in the vicinity of the speaker, and is not used with verbs requiring an object and showing a clear endpoint.

Perfect aspect. The Perfect aspect is expressed with the construction *zijn* ('be') / *hebben* ('have') + past participle.[15] Example (24) illustrates this.

(24) a *Peter* *is* *aangekomen*
Peter be.3SG arrive.PPART
'Peter has arrived'

b *Moeder* *heft* *een toren* *gebouwd*
Mother have. 3SG a tower build.PPART
'Mother has built a tower'

Perfective aspect. The perfective aspect is expressed in Dutch by using the simple past, as in example (25), or the construction *zijn* ('be') / *hebben* ('have') + Past Participle as examples (26a) and (26b) illustrate:

(25) *De poes* *at* *de vis*
The cat eat.PAST.3SG the fish

'The cat ate the fish.'

(26) a *Ik* *heb* *in* *het park* *gelopen*
I have.PRES.1SG in the park walk.PPART
'I walked in the park.'

b *Ik* *ben* *naar* *het park* *gelopen*
I be.PRES.1SG to the park walk.PPART
'I walked to the park.'

The verbs used in this study were grouped according to their semantic and morphological features. Studies on the acquisition of tense and aspect morphology have shown that particular grammatical morphemes expressing tense and/or aspect

[15] The auxiliary hebben ('have') is used with all transitive, ditransitive, and a considerable number of intransitive verbs. Within this group of verbs, two verb classes can be distinguished: stative and action verbs. Statives typically cannot be used with a durative aspect. Hence, they are not allowed in the 'aan het+INF' construction, as in (23b). Unaccusative verbs select the auxiliary *zijn* ('be'). This group consists of verbs describing a change of state (without mentioning an agent) or a movement with a clear endpoint: they include verbs like *breken* ('break'), *komen* ('come'). When verbs of motion do not show a clear endpoint, the auxiliary *hebben* is used.

never occurred with certain verb classes. Brown (1973) and Bloom et al. (1980), found that the progressive aspect marker –ing never overgeneralizes to stative verbs and that children use past tense morphology with a small group of punctual and completive verbs such as *fell, broke, dropped* and *found*. A similar link between tense-aspect marking and inherent temporal features (i.e. lexical aspect) has also been found in other languages such as French (Bronckart and Sinclair, 1973), Italian (Antinucci and Miller, 1976) and Turkish (Aksu-Koç, 1988). In an earlier study, Julien et al. (chapter 2)[16], found that stative verbs indicating internal states seldom occur with dummy auxiliaries and are used as finite verbs in initial position as early as 2;03 years of age. This finding corroborates those of researchers such as Jordens (1990), Schlichting (1996), and Wijnen (1995) who commonly agree that early finite verbs (in V1 of V2 position) are statives rather than eventives. In their study Julien et al. (chapter 2) also observed that stative verbs that express an external state, such as the verbs *zitten* ('sit'), *staan* ('stand'), *liggen* ('lie') occur with dummy auxiliaries, but the verbs that occur most frequently with dummy auxiliaries are action verbs.

Table 1-3. Verb classes and the expression of lexical aspect

Verb class	Characterization	Example	Auxiliary	Durativity
Stative	External state: no movement, no endpoint, no change	*zitten* ('sit') *liggen* ('lie')	*Hebben* ('have')	no
	Internal state: experiencer as subject	*kennen* ('know') *zien* ('see')		
Transitive	Action with agent and theme	*een tak breken* ('break a branch')	*Hebben* ('have')	yes
Intransitive	Action with agent, without theme	lachen 'laugh')		
	Motion without endpoint	***in*** *het park lopen* ('walk **in** the park')		
Resultative	Action without agent	*breken* ('break'), *gebeuren* ('happen'), *komen* ('come'),	*Zijn* ('be')	yes
	Motion with endpoint	***naar*** *het park lopen* ('go **to** the park')		

[16] See also chapter 2 of this thesis.

Similarly, research on L2 acquisition reports associations between lexical aspect and tense-aspect morphology like those discussed in L1 acquisition research (Andersen, 1991; Bardovi-Harlig and Reynolds, 1995).

Vendler's (1957) four-way distinction, characterizing verbs according to their aspectual features, was taken as the basis for the categorization on Table 1-3, which takes into account the intricacies of the Dutch language mentioned in footnote 10, such as the choice of auxiliary *zijn* or *hebben* depending on aspectual features of the verbs, and the expression of an endpoint.

Table 1-4. Verb types in Dutch

Verb types	**Characterization**	**Example**
Regular e.g. werken ('work')		Present: werk-ø (1SG) werk-t (2/3SG) werk-en (1/2/3PL) Past: werk-te (1/2/3SG) werk-ten(1/2/3PL) Past Participle: ge-werk-t
Irregular e.g. loop ('walk')	The past tense is marked by vowel alternation	Present: loop-ø (1SG) loop-t (2/3SG) lop-en (1/2/3PL) Past: liep (1/2/3SG) liep-en (1/2/3PL) Past Participle: ge-lopen
Particle e.g. aanbellen ('ring the bell')	When inflected, the particle stays in situ (sentence-final) and the verb moves upwards	Present: bel-ø aan (1SG) bel-t aan (2/3SG) bel-len aan (1/2/3PL) Past: bel-de aan (1/2/3SG) bel-den aan(1/2/3PL) Past Participle: aan-ge-beld

Table 1-3 shows that, when expressing the perfect aspect, most Dutch verbs select the auxiliary *hebben* ('have'), but with unaccusatives and ergatives the auxiliary *zijn* ('be') is used. Within the first group of verbs selecting *hebben* two verb classes can be discerned: statives and action verbs. Statives typically cannot be used with a continuous aspect (so, are not allowed in the '*aan het*+INF'

construction). The second group, selecting *zijn,* consists of verbs describing a change of state (without mentioning an agent) or a movement with a clear endpoint: verbs like *breken* ('break'), *veranderen* ('change'), *komen* ('come'), *rijden* 'drive'). When verbs of motion do not show a clear endpoint, the auxiliary *hebben* is used.

In order to be able to account for the eventual influence of the morphology of Dutch verbs on dummy auxiliary use, different types of verbs, grouped according to their morphological characteristics, are presented in Table 1-4.

1.8. Outline

This book comprises six chapters. In chapters 2 through 5, four studies are described in which the role of dummy auxiliaries in different populations is investigated. Chapter 2 presents the first study which deals with the use of dummy auxiliaries by young monolingual Dutch speaking children. This is a corpus study in which the central question is whether monolingual Dutch speaking children use dummy auxiliaries, in particular dummy *zijn*, for the same reason as adult learners of Dutch as an additional language do, that is, as a predecessor of movement of the lexical verb.

Chapter 3 presents another study in which the use and comprehension of dummy auxiliaries by adults learning Dutch as an additional language is investigated. The questions that we tried to answer were whether dummy auxiliaries are devoid of meaning and whether language proficiency in Dutch and language background influence their use and choice.

Chapter 4 reports on a study on the use and comprehension of dummy auxiliaries by L1 and L2 typically developing children.

Chapter 5 presents the final study, in which the use and comprehension of dummy auxiliaries by monolingual and bilingual children with specific language impairment are explored. The central question is then whether bilingual children with SLI exhibit a different pattern of dummy auxiliary use than bilingual typically developing children and adult DAL learners.

In chapter 6, the final chapter, general conclusions and a discussion of the results of this thesis are presented. In addition, implications for theory and practice are discussed and suggestions for further research are presented.

2. There is a dummy 'is' in early first language acquisition

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2.1. Introduction

The purpose of this chapter is to give an explanation for the observation that children acquiring Dutch as their mother tongue (L1) often produce sentences that do not occur in adult Dutch language, as in the examples in (1), in which the auxiliary verb *zijn* ('be') is followed by a nonfinite lexical verb (infinitive).

(1) a *Is(e)* *mak-en.*
be.3SG.PRES make-INF
'Makes.' or 'Is making.' (Laura 2;2, Van Kampen corpus)[17]

b *Haas* *is* *zitt-en.*
Hare be.3SG.PRES sit-INF
'Hare sits.' or 'Hare is sitting.' (Josse 2;2, Groningen corpus)

The equivalent adult constructions are given in (2a), (2b) and (2c). The adult form in (2a) *Hij maakt* ('he makes') expresses ongoingness but is unmarked for that aspect. The construction in (2b) *Hij is aan het maken* ('he is making' i.e. 'He is in the process of making') foregrounds the ongoingness of the event. However, in Dutch this marked form is restricted to some verb classes[18]. State verbs like *weten* ('know') or *zitten* ('sit') as in (2c) cannot be used in the progressive construction, and therefore a sentence like *De haas is aan het zitten* would be ungrammatical in standard Dutch, though it is used by some speakers when addressing children (see Table 2-2).

[17] The examples are taken from the CHILDES database: http://childes.psy.cmu.edu/dat/Germanic/

[18] In the published article, Julien et al. (2013), the term 'verb type' was used to refer to these verbs. That has been changed in this thesis in order to conform to the rest of the chapters, in which the term 'verb class' is used to refer to verbal lexical aspect, and the term 'verb type' is used to refer to morphological characteristics of verbs.

(2)	a	*Hij*	*maak-t.*		
		he	make-3SG.PRES		
	b	*Hij*	*is*	*aan het*	*mak-en.*
		he	be.3SG.PRES	on the	make-INF
	c	*Haas*	*zit.*		
		Hare	sit.3SG.PRES		

A few researchers of L1 Dutch (Blom, 2003; Jordens and Dimroth, 2006; Van Kampen, 1997; Van Kampen and Wijnen, 2000) have given examples of the construction *is*+infinitive (henceforth *is*+INF) like the ones in (1a) and (1b), though without further exploring this particular nontargetlike construction. The construction *is*+INF seems to occur early in L1 language development, alongside similar constructions which are permitted in Dutch. The appearance of these constructions occurs before or at the same time that finite lexical verbs begin to be used productively[19]. In (3), examples are given of the modal verb *willen* ('want') and the verb *gaan* ('go') followed by an infinitive.

(3)	a	*Ik*	*wil*	*slap-en.*	
		I	want.1SG.PRES	sleep-INF	
		'I want to sleep.'			(Sarah 2;1, Van Kampen corpus)
	b	*Ernie*	*gaa-t*	*spel-en.*	
		Ernie	go-3SG.PRES	play-INF	
		'Ernie is playing.'			
		Target[20]: Ernie speelt.			(Iris 2;5, Groningen corpus)

Both utterances in (3) are grammatically correct, but (3b) is semantically incorrect as the auxiliary verb *gaan* ('go') expresses near future or inchoative aspect in adult Dutch, and not an ongoing event. In the above utterance, however, Iris describes an action which is taking place at the moment of speaking. Another auxiliary plus infinitive construction is *doen* ('do') as in (4). Constructions as in (4) occur in spontaneous adult speech, but they are considered ungrammatical in standard Dutch. *Doen* ('do') may occur as an auxiliary verb in standard Dutch but only when it is used as topicalization of the V(erb) P(hrase) as for instance in *Bouwen doe ik ook* ('building, I do that too'). For a detailed discussion of this use of *doen* in Dutch we refer to Reuland (1983). Non-standard auxiliary *doen* constructions occur frequently in several Dutch dialects (Giesbers, 1983-1984; Barbiers, 2013. Both these dummy

[19] We considered a construction productive when it is used more than five times, with different verbs, within the same language sample.
[20] We add the Dutch target form when the adult target form is different from the observed child form.

auxiliaries are found in child-directed speech as well (Jordens, 1990; Klein, 1974; Lalleman, 1986). However, the construction with *zijn/is* is not reported in child-directed use.

(4)	*Ik*	*doe*	*bouw-en*	*ook.*
	I	do.1SG.PRES	build-INF	too
	'I also build.'			
	Target: Ik bouw ook.			(Laura 2;3, Van Kampen)

In (1a), (1b), (3b) and (4), the verb forms *gaat* ('goes'), *doe* ('do') and *is* ('is') are examples of what are termed 'dummy auxiliaries' (see Blom and De Korte, 2011; Van de Craats, 2009) or 'placeholders' (Garcia Mayo, Ibarrola and Liceras, 2005; Tracy, 2002). In the above examples, the elements *gaan* ('go'), *doen* ('do') and *zijn* ('be') do not seem to contribute to the compositional meaning of the sentence. Hence the use of the term 'dummy' to refer to them. They can be seen as verbal elements that express the grammatical features of the verb complex, the infinitive expressing the lexical features. Children's preference for the auxiliary/modal+INF construction at early stages of their language development has been noticed and reported by several researchers of L1 acquisition of Dutch (Blom, 2003; De Haan, 1996; De Jong et al., 2013; Jordens, 1990; Jordens and Dimroth, 2006; Schaerlaekens, 2000; Schlichting, 1996; Van Kampen, 1997; Wijnen, 2000; Zuckerman, 2001, 2013).

Nearly all previous research on L1 Dutch has focused on *gaan* and *doen* as dummy auxiliaries and hardly anything is known about *zijn*. The possibility of *zijn* (more particularly the form *is*) being used as a dummy auxiliary in Dutch L1 is mentioned in Blom (2003), but there it is not investigated in full detail. This stands in contrast to L2 Dutch, where various studies have pointed to the importance of *is* as a dummy auxiliary (Blom and De Korte, 2008, 2011; Van de Craats, 2009; Van de Craats and Van Hout, 2010; Verhagen, 2009, 2013). Therefore, in the present study the role of dummy auxiliary *is* in L1 Dutch is investigated.

The idea we want to investigate in this study is that monolingual Dutch speaking children use dummy *is* for the same reason as adult learners of Dutch as L2 do, that is, as a predecessor of movement of the lexical verb (Van de Craats, 2009; Verhagen, 2013). We are trying to find an answer to the question whether, and if so, why children produce periphrastic constructions like (1a), (1b) (3b) and (4) instead of synthetic constructions as in (2a and 2c).

To this end, longitudinal spontaneous speech data from five monolingual Dutch children between the ages of 1;6 and 3;6 years was analysed. The use of the verbs *zijn*, *gaan, doen* has been examined in detail because in the literature they are mentioned to occur as dummy auxiliaries. In addition, *hebben* 'have' was included in the analysis, because it also occurs in combination with a nonfinite lexical verb (i.e., a past participle) in the target language and therefore might be a potential candidate for dummy use.

The structure of the paper is as follows. In section 2, the relevant morphosyntactic characteristics of Dutch are presented and a description is provided of the stages that children go through when acquiring finiteness in Dutch. Next, recent accounts for the use of dummy auxiliaries in L1 development of Dutch are discussed. We end this section by formulating three research questions, all related to our main hypothesis. In section 3 the method of analysis will be explained. In section 4, results of the corpus analyses are presented regarding the occurrence and role of the different auxiliary verbs in the acquisition of finiteness. Finally, section 5 ends with a discussion and conclusion based on the results of the present analysis, supporting our proposal that the verb *zijn* plays an important role in the L1 acquisition of the position and the form of the verb in Dutch.

2.2. Finiteness in Dutch

2.2.1. Morphosyntactic characteristics

Finiteness is a functional property of Germanic languages. The notion of finiteness refers to the property of the verb to express time, number and mood. Finiteness is thus linked to morphosyntactic properties of agreement and tense-aspect marking which are carried by auxiliaries and lexical verbs. In all Germanic languages, with the exception of English, all main clauses have a special property, namely Verb Second (V2), which means that the finite verb occupies the second position in the main clause, irrespective of which constituent occupies the first position. In the standard generative analysis (for Dutch: Den Besten, 1989), the V2 order is derived from an underlying structure in which the verb is in head-final position within the VP. Through head-to-head movement from V to Tense and AGR(eement), the finite verb ends up in C(omplementizer) position, and remains in situ when C is occupied by a complementizer.

Table 2-1. Dutch inflectional paradigm for regular verbs in the present tense

Person and number	-suffix	Example: *pakken* 'to take'	
1SG	-ø	*Ik pak*	'I take'
2SG	-t / -ø	*Jij pakt, but: Pak jij/je*	'You take'
3SG	-t	*Hij pakt*	'He takes'
1,2,3 PL	-e(n)	*Wij/jullie/zij pakken*	'We/you/they take'
INFINITIVE	-e(n)	*Pakken*	'to take'

In Dutch, verbal suffixes mark tense and agreement: The marker of the first person singular is a null suffix. This form cannot be distinguished from the verb stem. The second and third person are marked by /t/ (except when the 2SG subject follows the verb; in these situations, a null suffix is used), and the plural marker is /*en*/. These plural forms cannot be distinguished from the infinitive (see Table 2-1).

2.2.2. Constructions with *is*, auxiliaries and verb classes

Is occurs most frequently as the third person singular form of the copula *zijn*, as in (5a), in which *is* links the subject and an adjectival predicate. *Is* also occurs in combination with a prepositional infinitival complement as in (5b), when progressive aspect is emphasized. The construction *zijn* +INF without the preposition is used in spoken standard Dutch to give information on the whereabouts of an absent person as in (5c) . At last, when *is* is an auxiliary, as in (5d), it is linked to a past participle expressing perfective aspect.

(5) a *De vrouw **is** oud.*
the woman is old
'The woman is old.'

b *Vader **is** aan het lezen*
father is on the reading
'Father is (in the process of) reading.'

c *Vader **is** viss-en*
father is fish-INF
'Father went fishing.'

d *De vrouw **is** ge-komen.*
the woman is PPART-come
'The woman has come.'

In addition to *zijn/is* other auxiliaries may express aspect and modality in combination with a nonfinite lexical verb. The modal (often with a reduced inflectional paradigm, one form for singular and one for plural) and the aspectual auxiliary are in V2 position and the lexical verb in sentence-final position. This is illustrated in (6a) and (6b). *Gaan* in (6b) expresses near future or inchoativity.

(6) a Modal auxiliary

Vader	*moet*	*de brief*	*lezen.*
father	must.3SG.PRES	the letter	read.INF

'Father must read the letter.'

b Aspectual auxiliary

Vader	*gaa-t*	*de brief*	*lezen.*
father	go-3SG.PRES	the letter	read.INF

'Father is going to read the letter.'

When expressing perfect aspect, most Dutch verbs select the auxiliary *hebben* ('have'), but with unaccusatives and ergatives the auxiliary *zijn* is used.

Within the first group of verbs selecting *hebben,* two verb classes can be distinguished: statives and action verbs. Statives typically cannot be used with a durative aspect: They are not allowed in the '*aan het*+INF' construction, as in (5b). The second group, selecting *zijn*, consists of verbs describing a change of state or a movement with a clear endpoint: verbs like *breken* ('break'), *veranderen* ('change'), *komen* ('come'). When verbs of motion do not show a clear endpoint, the auxiliary *hebben* is used. See Table 2-2 for an overview and examples.

Table 2-2. Verb classes and the expression of perfectivity and durativity

Verb class	Characterization	Example	Auxiliary	Durativity
State	External state: no movement, no endpoint, no change	*zitten* ('sit') *liggen* ('lie')	hebben	no
	Internal state: experiencer as subject	*kennen* ('know') *zien* ('see')		
Action	Activity: with agent and object	een tak breken ('break a branch')	hebben	yes
	without object; motion without endpoint	*lachen* ('laugh') *in het park lopen* ('walk in the park')		
Change	Resultatives: without agent; and with motion with endpoint	*breken* ('break'), *gebeuren* ('happen'), *komen* ('come'), *naar het park lopen* ('go to the park')	zijn	yes

2.2.3. Stages in the acquisition of finiteness in L1 Dutch

It takes a few years for a child to acquire adult-like command of finiteness in Dutch. However, there is no consensus as to the age at which Dutch children acquire finiteness. Some researchers (e.g. Polišenská, 2010; Van Kampen and Wijnen, 2000) report that three-year-old children have already mastered almost all finite morphemes. Other studies report that Dutch children around the age of three still show nontargetlike use of finite morphemes (Blom, 2003; De Haan, 1996; Schlichting, 1996; Wijnen and Verrips, 1998). A plausible explanation for this lack of consensus is that different criteria, different sorts of data (elicited versus spontaneous speech data) and different verb categories (i.e., lexical verbs, copulas, auxiliaries and modals) were involved to decide whether or not a child has acquired finiteness. Despite the divergent conclusions as to the age at which children acquire finiteness, most researchers agree that they acquire the intricacies of finiteness in a stepwise manner. The following is the most commonly accepted description of the major steps that lead to finiteness in Dutch.

Dutch children start their development of finiteness by using root infinitives (RIs) in which the verb is nonfinite and unmoved, that is, at the end of the sentence (Blom, 2003; Haegeman, 1995). This stage is followed by a stage in which children use finite verbs (FINs) and RIs at the same time (the so called Optional Infinitive Stage or the Differentiation Stage). Finite verbs appear in initial position (V1 or V2) and RIs in final position. Most researchers (e.g., Blom, 2003; De Haan, 1986, 1987; Jordens, 1990; Schlichting, 1996; Wijnen, 1995b) agree that finite verbs and nonfinite verbs are not only bound to distinct structural positions, but are semantically distinct as well, at least in the beginning of this stage. Early finite verbs (in V1 or V2 position) express time or modality and are statives rather than eventives; nonfinite verbs (in final position) denote action or change. The last stage marks the productive use of simple finite phrases, that is, sentences that contain a lexical finite verb moved to C (i.e., V2).

2.2.4. Accounting for the use of dummy verbs in L1 Dutch

Explanations suggested by researchers for the observed use of dummy auxiliaries by Dutch L1 children can be divided into two types: those in which it is claimed that dummy auxiliaries are primarily used to mark a syntactic position and to realise grammatical features, and that meaning plays a minor role (s*tructural accounts*)*,* and

those in which it is assumed that semantic and pragmatic aspects of finiteness are acquired before their morphosyntactic aspects (*functional accounts).*

Structural accounts

There are significant differences between the various structural accounts. Van Kampen (1997), and Hollebrandse and Roeper (1996), among others, propose a 'least-effort' account for the Aux+INF phenomenon. They argue that children use these periphrastic forms as a strategy to avoid the movement of the lexical verb to the second position without violating the grammar of Dutch: by putting the dummy, which carries tense, person and number properties, directly in second position, the child can leave the lexical verb in the original position and still produce a grammatically correct, finite sentence.

Van Kampen interprets the Aux+INF phenomenon as an intermediate stage that precedes the final stage in which the child realizes the full function of the C position. When children clearly establish the V2 rule, the use of AUX+INF structures decreases (although, of course, they are not completely abandoned since some combinations, as for example *gaan*+INF, are allowed by the target language with the restricted reading of near future). According to Van Kampen's analysis, the Aux+INF phenomenon is not primarily input-related and the decrease in the occurrence of this structure is dependent on syntactic rather than semantic discoveries made by the child.

Hollebrandse and Roeper (1996) propose an account for *do*-insertion in Dutch and English that is based on the assumption that a tense domain has to be c-commanded by the tense morpheme. They assume that auxiliaries are not inserted but 'formed' as a spell-out of the tense morpheme. They view *do*-insertion (and *is*-insertion as well, according to Roeper, 1999) as a phonological spell-out rather than as a syntactic phenomenon.

Building on De Haan (1987), Blom (2003) also recognizes the relation between the use of dummy auxiliaries and verb movement, and she sees the overuse of periphrastic verbs as a step that mediates between the exclusive use of RIs and the productive use of simple finite lexical verbs. As she puts it, "Children overuse periphrastic verbs as long as they lack knowledge of the grammatical marking of finiteness by verbal inflections and, consequently, verb movement" (Blom, 2003: 168). According to Blom, Dutch children use finite sentences before they have access to the morphological rule to inflect verbs. In the early stages, children do not know that verb forms consist of segments, that is, stem+suffix. By implication, the

earliest finite sentences contain what she calls 'lexical finiteness markers'. She claims that finiteness starts out as a lexical feature and is reanalysed as a grammatical feature that can be added to items that belong to the class of V by means of a morphological rule. The syntactic effect of the acquisition of inflections is that the operation of verb movement is introduced into the child grammar.

Research by Van Kampen (1997) and Zuckerman (2001, 2013) has shown that monolingual Dutch children use dummies in main sentences (sentences that require verb movement), and that dummies in subordinate sentences (that do not require verb movement) are very rare. This observation supports the hypothesis that the use of dummies is related to verb movement.

Zuckerman (2001) examined the use of the dummies *gaan* and *doen*, and proposed an account which he terms optional movement. Concerning the dummies *gaan* and *doen*, his proposal is that children mistakenly consider the *gaan*+INF and *doen*+INF constructions as identical to the standard finite form, and thus as a grammatical option for describing an ongoing event. Children are aware of two available options and, following considerations of economy, they prefer one of them in matrix clauses and the other in embedded clauses. The *is*+INF construction is not reported by Zuckerman.

Functional accounts

Jordens and Dimroth (2006) and Jordens (2013) claim that early verb forms considered dummy auxiliaries (without meaning) by advocates of a structural account, have a function in the information structure of early child language. Those 'dummies' link the topic to the predicate and have a semantic-pragmatic meaning. Their linguistic function is to express properties of illocutionary force. They propose that *is* has the function of assertion, *doet* has a default function and *gaat* an aspectual function (see also Jordens, 2013).

Jordens and Dimroth (2006) offer a functional account to stipulate when children abandon the Aux+INF constructions and reach the final stage. As Jordens (1990: 1437) puts it: "The periphrastic use of *doet* and *gaat*+INF will decrease in favour of systematic verb fronting as soon as the child acquires a sense of the semantic difference between a particular Aux+INF pattern and its corresponding V-finite alternative".

2.2.5. Research questions

What is clear from the above accounts is that all of them consider the use of dummy auxiliaries as an intermediate step towards the acquisition of finiteness. Although some of these researchers (e.g., Blom, 2003; Van Kampen and Wijnen, 2000) reported the use of *is* as a dummy auxiliary, most of them, with the exception of Blom[21], did not try to find an explanation for its use in the way they did for the overuse of *doen-* or *gaan-* constructions.
It is this explanation that the present study seeks to obtain. In order to do so, the following three research questions need to be addressed:

1. Do auxiliaries in general and *is* in particular, show up before lexical finite forms are used productively?
   An affirmative answer might indicate that they have a role in the acquisition of finiteness.

2. Do the dummy auxiliary verbs *zijn (is), doen, gaan*, and the modal verbs, emerge simultaneously, in such a way that they clearly are part of the same developmental stage?
   An affirmative answer would provide evidence for a similar role of is and the other auxiliaries in the acquisition of finiteness.

3. Do particular classes of lexical verbs occur more frequently in combination with dummy auxiliaries?
   An affirmative answer would suggest that the degree of difficulty of acquiring finiteness depends on the class of lexical verb.

2.3. Method

2.3.1. Data and participants

Our analysis is based on spontaneous longitudinal data from five Dutch monolingual children, aged between 1;6 and 3;6 years. The data come from the two large corpora

[21] Blom (2003) suggests that the *is*+INF construction is a precursor of the prepositional infinitival construction: *is*+*aan het*+verb complement, and that Dutch children do not seem to make a distinction between those two constructions (cf. (5b) and (5c)).

(the Van Kampen corpus, Van Kampen, 1994, and the Groningen corpus, Wijnen and Bol, 1993) of L1 monolingual Dutch available in the CHILDES databank (MacWhinney, 2003). Except for one of the children, Iris, the recordings were made regularly, with an interval of approximately two weeks between the recordings. Despite the reduced number of recordings in the case of Iris, due to recurrent middle ear infections[22], it was decided to keep her in this study since she represents a considerable percentage of normally developing children. This holds as well for Laura, who also suffered from middle ear infections during the period in which the recordings used in this study were made (see Van Kampen, 1997). Recurrent ear infections are often associated with temporary hearing loss and delayed language and speech development.

2.3.2. Data selection and analysis

The data selection started at a more global level by making an inventory of the occurrence of dummy auxiliaries in the corpora mentioned above. It was concluded that all children used dummy auxiliaries. Following this first survey, five children were chosen – Josse, Iris, Abel, Laura and Sarah – to be analysed in more detail. Data between the ages of 1;6 and 3;6 seemed to be appropriate for studying the role of dummy auxiliaries in the acquisition of finiteness, since, as reported in the literature (Blom, 2003; Polišenská, 2010; Schlichting, 1996; Van Kampen and Wijnen, 2000), this is the age range within which children acquire finiteness in Dutch. In this detailed analysis, the use – moment of first emergence, beginning of productive use[23], and frequency – of candidates for dummy use was investigated: the verb *zijn* ('be'), being the focus of this study and the verbs *doen* ('do') and *gaan* ('go') known from previous literature. The use of auxiliary *hebben* ('have') and the modals was included in the analysis because these verbs may also occur in combination with a nonfinite verb: modals with an infinitive and *hebben* with a past participle.

All recordings contain spontaneous speech of these children in an unstructured regular home setting, when talking with their father or mother and an investigator. The recordings were made roughly twice every month.

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[22] Retrieved from CHILDES manual on Germanic corpora, p.19: http://childes. psy.cmu.edu/manuals/ in January 2012.

[23] We considered a construction productive when it is used more than five times, with different verbs, within the same language sample.

The Abel corpus consists of 28 files, all of which were analysed. The language samples were recorded from age 1;10 until 3;4. The Josse corpus also consists of 28 files, recorded from age 2;0 until 3;4. All 28 files were included in the present analysis. The Laura corpus consists of 72 files and the recordings were made from the age of 1;9 to the age of 5;10. Of those files only 38, those from 1;9 until 3;4 years of age, were used for the analysis. The Sarah corpus consists of 50 files based on recordings from age 1;6 to 6;0, of which only those from 1;6 until 3;6 (34 files) were used for this study. Each transcription (i.e., each file) of these four children is based on a 45-minute audio recording. From the fifth child, Iris, there are 22 transcription files all of which were included in the present study. The audio recordings, based on 30 to 75 minutes, were made from age 2;1 until 3;6. All utterances containing a verb, from all the above mentioned files, were coded. A coding system was developed in which synthetic and periphrastic verbs were distinguished (examples are in Table 2-3).

Synthetic verbs (consisting of one verb form):
RIs, stems, finite verbs, nonthematic verbs, light verbs, past participles.

Periphrastic verbs (consisting of two verbs):
Aux+ past participle, Aux+ infinitive / finite verb or stem, Aux+ preposition + (het +) infinitive/stem construction.

In order to see whether copula *zijn/is* precedes the emergence of the dummy auxiliary *zijn/is,* and whether modals precede the copula *zijn/is*, the two verb categories were subdivided into subcategories, as can be seen in Table 2-3. In this table, two categories of synthetic verbs are included that are most often used in a periphrastic construction, viz. modals and past participles. In order to differentiate them from the periphrastic forms, these independently used verbs are called 'bare': bare modals and bare participles. The light verbs *doen* and *gaan*, which can be applied to a wide range of activities and situations and may lack a specific meaning, are also set apart from the lexical verbs because they can easily adopt the thematic structure of lexical verbs and replace them.[24] Separating them from the finite lexical

[24] It is a property of nonthematic verbs – not having a thematic structure of their own – to take over the thematic structure of the lexical verb in their complement. This is also the case with the light verbs doen en gaan. *Hij doet de auto repareren* (he does the car repair; 'He is repairing the car') or *Hij gaat*

verbs enables us to see whether these light verbs appear in initial position before their dummy auxiliary counterparts.

Table 2-3. The two main categories of verbs and the encoded subcategories

Synthetic verbs	**Example**	
Root Infinitive (final)	*Mama pop geven*	('Mom doll give')
Stem of lexical verb (initial)	*Mama geef pop*	('Mom give doll')
Finite lexical verb (initial)	*Mama geeft pop*	('Mom gives doll')
Nonthematic verbs (initial)		
Copulas		
zijn ('be')	*Pop is mooi*	('Doll is beautiful')
hebben ('have')	*Ik heb geld*	('I have money')
Bare modals	*Zij mag snoep*	('She may candy')
Thematic (potential light verbs)		
doen ('do')	*Ik doe dat*	('I do that')
gaan ('go')	*De boot gaat niet meer*	('The boat goes no more')
Bare past participle (final)	*Weggegaan*	('Gone away')
Periphrastic verbs: Aux+NONF/FIN	**Example**	
Aux + past participle	*Hij heeft een pop gemaakt*	('He has made a doll')
	Hij is weggegaan	('He has gone away')
Zijn ('be') + INF	*Konijn is huilen*	('Rabbit is cry.INF')
Zijn + FIN	*Konijn is huilt*	('Rabbit is cry.FIN')
Zijn + Prep + het + INF/FIN	*Hij is aan het lopen*	('He is walking.INF')
Hebben ('have') + INF/FIN	*Ik heb pop maakt.*	('I have doll make.FIN')
Modal + INF/FIN	*Die kan niet liggen*	('That one cannot lie.INF')
Gaan ('go') + INF/FIN	*Ik ga ook lopen*	('I go also walk.INF')
Doen ('do') + INF/FIN	*(I)k doe even tekenen*	('I do just draw.INF')

The verbs were coded on the basis of the form in which they appeared in the transcript and not on the basis of the interpretation of the transcriber. Hence, in an utterance like *Papa huis lopen* (Daddy home walk.INF; 'Daddy walks home'), in which *lopen* could be an infinitive, but also a bare participle with omitted prefix *ge-*, it is coded as a root infinitive.

The following types of utterances were excluded from the analysis: utterances which seemed to have been stored in the lexicon as a chunk, for example the text of a song or a fixed expression, imperatives, false starts, unintelligible responses, interrupted responses and responses which were clearly a full or partial repetition of what the interlocutor had said. Also those utterances were excluded that were not classifiable, that is utterances which we were not able to interpret, for instance

de auto repareren (he goes the car repair; 'He is going to repair the car'). Here *doet* and *gaat* have lost their original lexical meaning and thematic structure. See also Van de Craats & Van Hout (2010: 476-479).

because they had no subject as in '*s(l)aap*' (sleep.STEM) or because they were unintelligible as the following transcription illustrates '*o, (ge)k(n)oei(d)!*'.

2.4. Results

We examined the use of nonthematic and light verbs (*doen* and *gaan*) in bare form (without INF or past participle) and in the periphrastic Aux+INF construction in relation to the use of RIs in sentence-final position and in relation to the use of finite thematic verbs in sentence-initial (V1 or V2) position. All utterances containing a verb produced by these five children were counted. In Figures 2-1 through 2-5 nonthematic verbs and light verbs are classified under bare auxiliaries (bare Aux) because they can all behave as auxiliaries when combined with an infinitive. The copula form *is*[25] also belongs to this class of verbs, but is represented separately, as it is the focus of analysis in this study. This also holds for *is* in the Aux+INF construction. Figures 2-1 through 2-5 show the most relevant findings for the five children. All figures run from month 18 to month 42. If there are no recordings in a given month no bar is shown. Each bar is the sum of all types of utterances produced in that month. All utterances with a verb produced by the child in that month add up to 100%.

2.4.1. The emergence of bare Aux, Aux+INF and finite lexical verbs

Abel

Abel's samples run from 22 through 40 months of age. There is no data available for month 33. Abel's analysis is thus based on data collected during a total of 18 months. In the first five months, each sample - in this analysis a sample consists of all recordings made in a month – contained fewer than 50 utterances with a verb. From the 10th month onwards all samples have more than 50 utterances with a verbal element. The number of utterances with a verb ranges from 3 to 444 per sample.

[25] We choose to mention only the form *is*, the third person singular of the verb z*ijn*, because this is the conjugation used most often by these children.

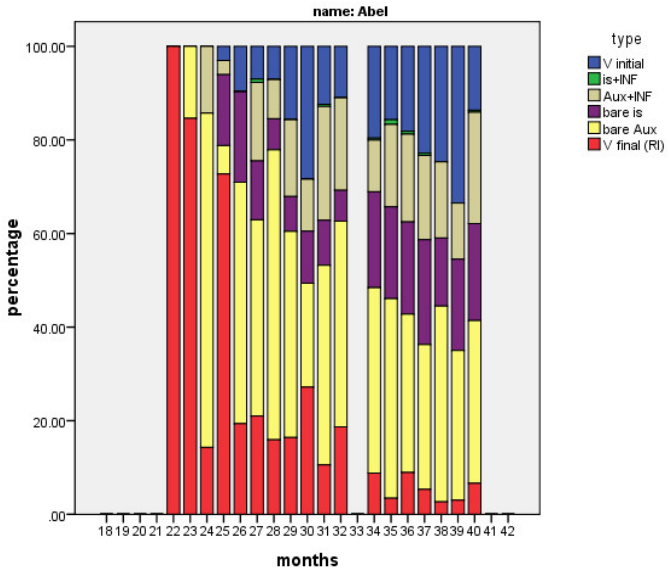

Figure 2-1. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Abel's speech over 18 months (22-40), with specification for *is*+INF and bare *is*.

As shown in Figure 2-1, at the age of 22 months Abel produces exclusively RIs. Their occurrence starts to decrease one month later and, except for the 25th month, this decrease is constant. In the last analysed samples the percentages of RIs are lower than 10%. Nonthematic verbs (bare Aux) appear at the age of 23 months (15%) and keep being used throughout all the analysed samples. In the last eight months their percentages oscillate around 40%. In month 24 the first periphrastic verbs appear. Simultaneously with the appearance of a considerable percentage (15%) of bare *is* in month 25, thematic verbs in initial position are initially used in small numbers (less than 5%), increasing steadily and reaching percentages between 20% and 35% between the ages of 30 and 40 months. Abel produces thematic verbs in initial position productively at the age of 28 months. This is one month later than the age at which he starts using the construction *is*+INF. Abel uses *is*+INF sporadically and in low percentages. At 27 months of age he uses this construction only once. The next time he uses it is at the age of 31 months. In the period between months 34 and 37 he uses it twice every month, and again only at the age of 40 months.

Josse

Josse's samples run from 24 through 40 months of age. There is no data available for the 34th month. Josse's analysis is therefore based on data collected during a total of 16 months. At the age of 24 months Josse already produces more than 50 utterances with a verbal element per sample. So, with the exception of month 29, in which only 20 utterances were produced, all Josse's samples have more than 50 utterances with a verbal element. Overall the number of utterances per sample ranges from 20 to 440. It is striking that, in Figure 2-2, at the age of 24 months, Josse still produces about 96% RIs, much more than Abel does at this age. However, the percentage of RIs at 25 months of age is similar for both children, and there is a considerable decrease in the number of RIs in the next months reaching a level of less than 5% at the age of 40 months.

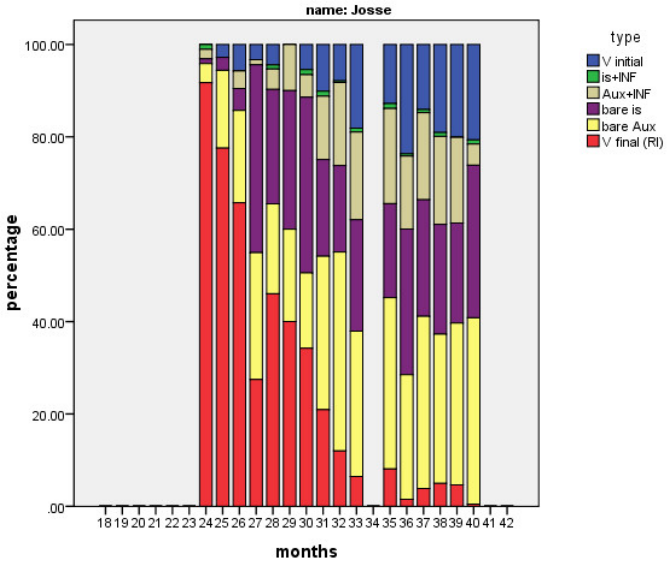

Figure 2-2. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Josse's speech over 16 months (24-40), with specification for *is*+INF and bare *is*.

At the age of 24 months Josse produces simultaneously bare Aux forms, including bare *is*, and Aux+INF forms, including *is*+INF. During the next months all these forms continue to be used, the bare forms being used most frequently. The number of Aux+INF forms increases and stabilises at around 30% in the period between 31 and 39 months. At the age of 25 months Josse starts using thematic verbs in initial position. Figure 2-2 illustrates clearly that Josse's use of thematic verbs in initial

position increases steadily and stabilises at around 20% in the last three months. At the age of 27 months Josse's use of bare *is* increases to 40%. He continues to use approximately the same percentage of bare *is* throughout the whole age range comprised in this analysis.

Josse already uses the periphrastic construction *is*+INF at the age of 24 months (one occurrence), and continues to use it through the whole age range that this analysis encompasses. At the age of 28 months he produces it again (once), at the age of 30 months he produces it twice, followed by three times in the next months. *Is*+INF occurs once in the month that follows and again twice when Josse is 33 months of age. The use of this construction increases in the following months: at the age of 35 months he produces it four times, the next month twice and in the following month three times. At the age of 38 months Josse still produces this dummy three times and at the age of 40 months he produces it twice.

Sarah

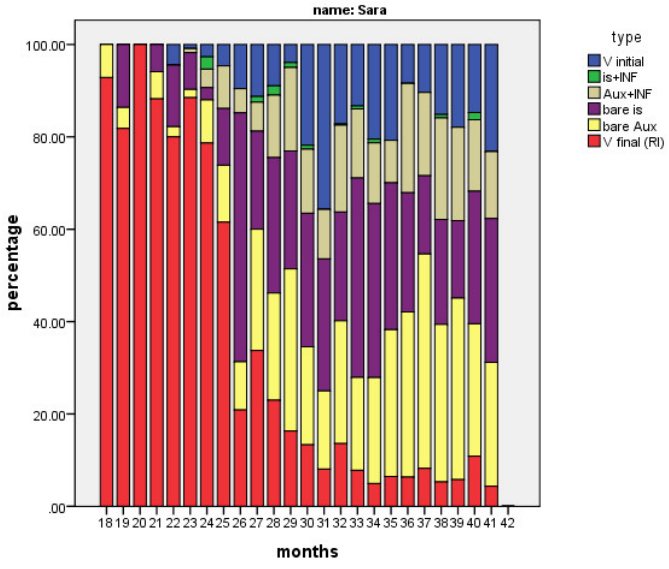

Figure 2-3. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Sarah's speech over 22 months (18-41), with specification for *is*+INF and bare *is*.

Sarah's recordings start already at the age of 18 months and continue until 41 months of age. The analysis of her language is thus based on data collected during a

total of 24 months. In the first 5 months Sarah produces fewer than 50 utterances with a verbal element per sample. From the age of 23 months all samples have more than 50 utterances with a verbal element. The number of utterances per sample ranges between 14 and 392.

Figure 2-3 shows that, when she is 18 months old, Sarah almost exclusively uses RIs (90%). This percentage decreases gradually to less than 10% at the age of 41 months. At 18 months of age a small percentage (less than 10%) of bare Aux is also used. In the next month bare *is* shows up in her speech. From that age onwards until the age of 27 months, with the exception of month 24, the percentage of bare *is* is higher than that of the other bare verbs. From then on the numbers of bare *is* and the sum of the other bare verbs are more or less equivalent. Sarah starts using the Aux+INF construction at the age of 23 months, and *is*+INF at 24 months (two occurrences). Both constructions continue to be used until the age of 40 months. The construction *is*+INF is used in smaller numbers, but is, nevertheless, present in Sarah's speech during a considerable period of time. The next time it is used is at the age of 27 months (once). Its use increases in the following months (eight times at the age of 28 months, three times at the ages of 29 and 30 months) and decreases from then onwards (month 31 null occurrences, month 32 one, month 33 two and month 34 one). After that, *is*+INF is used once at the age of 38 months and twice at the age of 40 months.

Sarah already produces the first thematic finite verbs at the age of 22 months. However, this use of lexical verbs in initial position is not productive yet (it concerns only two occurrences); its productive use starts at the age of 27 months (9 utterances and 7 different verbs). From that age onwards, Sarah's production of finite lexical verbs increases and the percentages oscillate between 4% and 36%.

Iris

As can be seen in Figure 2-4, the analysis of Iris' language is based on data covering 13 months. In the first sample, at the age of 25 months, Iris produces only three utterances with a verbal element. From the age of 33 months on, all samples contain more than 50 utterances with a verb. The number of utterances with a verb ranges from 3 to 362 per sample. The data shows the same tendencies as that of the children presented before, but there are some peculiarities. At the age of 25 months Iris produces RIs and two bare auxiliaries, *is* and forms of *hebben*. The percentage of RIs is considerably lower (35%) than that produced by the other children at this age. However, at the age of 32 months she still produces 62% RIs. That is almost twice

as much as what she produces at the age of 25 months and three times as much as Josse and Sarah produce at that age.

At the age of 29 months, the construction Aux+INF and thematic verbs in initial position are used alongside with the RIs and the bare auxiliaries acquired previously, bare *is* being by far the most frequently used bare verb. At the age of 34 months thematic verbs in initial position are used productively (9 utterances with 5 different finite verbs), reaching the percentage of 14%. It is also at this age that Iris uses the construction *is*+INF (twice) for the first time. In the next month the use of this construction triples, but it decreases afterwards: At the age of 36 months there are no occurrences, at the age of 37 months two, at the ages of 38 and 39 months one and in the last two recordings, at the ages of 41 and 42 months, she uses it twice and once respectively.

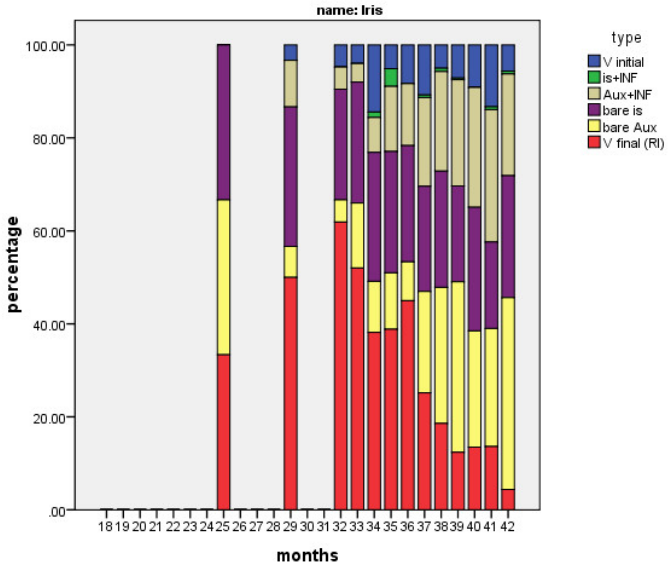

Figure 2-4. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Iris' speech over 17 months (25-42), with specification for *is*+INF and bare *is*.

The increase in the number of finite verbs around the age of 34 months occurs soon after placement of tympanic tubes in April, 1993 (see endnote 4). However, in the next months the percentages of finite verbs decrease slightly. So, Iris seems to have caught up with the other children regarding the use of RIs (less than 10% at the age of 42 months), but she still produces fewer finite verbs than Abel, Josse and Sarah.

At the age of 42 months initial thematic verbs only occur at a level of 6% in her speech.

These findings support the conclusion that Iris' communication skills '... appeared to have significantly improved. Nonetheless, her linguistic development appears to be somewhat retarded.' (see Germanic Corpora p.19 at http://childes.psy.cmu.edu/manuals/).

Laura

Laura's recordings start at the age of 21 months and continue uninterruptedly until 40 months of age. The analysis of her language is thus based on data collected during a total of 20 months. In the first three months Sarah produces fewer than 50 utterances with a verbal element per sample. From the age of 24 months on, all samples contain more than 50 utterances with a verbal element. The number of utterances with a verb ranges from 16 to 308 per sample.

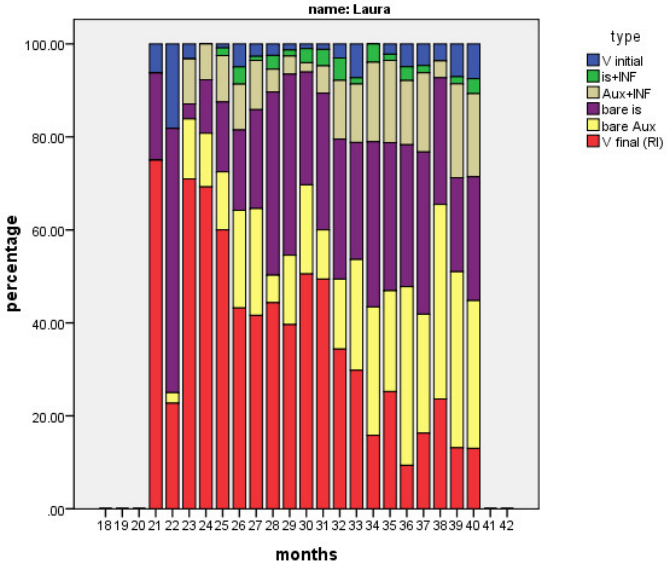

Figure 2-5. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Laura's speech over 19 months (21-40), with specification for *is*+INF and bare *is*.

Figure 2-5 shows that Laura's use of RIs decreases but not as steeply as in the case of the children discussed previously. At the age of 21 months she produces about 75% of RIs and at the age of 40 months she still is producing more than 10% of RIs.

Laura starts using the bare *is* at 21 months. At the same age she starts producing finite thematic verbs in initial position. The other bare auxiliaries appear at the age of 22.

The construction Aux+INF starts being used by Laura at the age of 23 months, two months later than the first bare nonthematic verb, which was bare *is*. Of all five children Laura is the one who uses the combination *is*+INF most frequently. She starts using it twice at the 25th month of age and uses it consistently until the last sample analysed. At the age of 26 months she uses it three times and in the next month once. At 28 months of age its use increases, six times, but at the age of 29 months she uses it only twice. In de next two months she uses it three times per month. The use of *is*+INF increases to eight times in month 32, and decreases in the next three months to twice, three times and three times respectively. Its use increases again to six times in month 36. In the next month she produces it twice and in the month after there are no occurrences. When Laura is 39 months of age she produces this construction three times and in the next month ten times.

Interestingly, in the two months preceding the first use of the construction Aux+INF she already produces thematic verbs in initial position. However, in the months that follow the use of lexical verbs in initial position does not increase and it is only at the age of 35 months that they start being used productively. The fact that those finite verbs are not used productively, added to the fact that the use of finite forms drops in the next months, leads us to assume that these first occurrences are unanalysed insertions taken directly from the lexicon.

Laura's use of thematic verbs in initial position does not show the same increase observed in the development of Abel, Josse and Sarah. With the exception of the 22nd month, Laura's production of finite thematic verbs stays at percentages around 3%, rising to 7% in the last months of this analysis.

So, the overall picture from Figures 2-1 to 2-5 is that the use of RIs decreases as the children grow older from more than 75% between the ages of 18 and 22 months to approximately 10% around the age of 40 months. Iris and Laura show a less steep decrease of RIs than the other three children. While the numbers of RIs produced by the other three children at the age of 32 months have already dropped to percentages between 10% and 20%, Iris still produces 60% of RIs and Laura slightly less than 40%.

One other general conclusion from the figures above is that, with the exception of Josse, the use of nonthematic bare verbs (bare Aux), including bare *is*, precedes

the use of the periphrastic construction Aux+INF, and that both precede the productive use of thematic verbs in initial position. The copula *zijn*, which is produced almost exclusively in the third person singular form *is*, is used abundantly by all five children. It is the most frequently used verb form of all bare thematic and nonthematic verbs.

Figures 2-1 through 2-5 further show that in the case of three of the children (Sarah, Abel and Josse) the rise in the use of thematic verbs in initial position goes hand in hand with an increase in the use of the Aux+INF construction. After the age of 36 months these three children use a roughly equal number of thematic verbs in initial position and of the periphrastic construction Aux+INF. In the case of the other two children (Laura and Iris), the use of thematic verbs in initial position is also characterised by a gradual increase, but the Aux+INF construction is used more often than the finite thematic verbs. In the last samples analysed, both Iris and Laura still produce a large number of (dummy) auxiliaries and a few thematic verbs in initial position. Nevertheless, although the development of these two girls is slow, it follows the same pattern as that of the other three children.

The construction *is*+INF is used by all five children in small percentages, Laura being the one using it most frequently. All children, with the exception of Josse, who used several constructions simultaneously from the start, begin to use the *is*+INF construction after having started using bare Aux, bare *is* and Aux+INF. For two of the five children (Abel, Sarah) the productive use of thematic verbs in initial position started respectively two and three months after the first appearance of bare verbs and the Aux+INF construction: Sarah produces thematic verbs in initial position productively at age 2;03 and Abel at the age of 2;04. For the other three children the productive use of thematic verbs in initial position started later. Josse begins to use them at age 2;07, seven months after their first occurrence, Iris at the age of 2;10, and Laura at the age of 2;11, which is five and fifteen months respectively after the first use of thematic verbs in initial position.

2.4.2. Use of dummy auxiliaries

The preceding analysis gives us a window on the development of finite lexical verbs in relation to the RIs, the bare forms of nonthematic verbs and the periphrastic verbs in the five children investigated. It does not, however, address the research question whether the dummy auxiliary verbs *zijn*, *doen*, *gaan*, (and *hebben*) and the modal verbs occur in the same or in different developmental stages. Their simultaneous

occurrence within the same developmental stage may support the idea that these auxiliaries play a similar role in the acquisition of finiteness, namely as predecessors of the finite lexical verb. Their successive occurrence would point to a differential role in the process of acquiring finiteness.

A closer look at the auxiliary system is given in Table 2-4 in which the categories of bare Aux and Aux+INF are specified for the five children in relation to the months in which they occur, including their first occurrence. The category of thematic V_{FIN} is added as well.

Table 2-4 leads to the observation that not modals, but the copulas *zijn* and *hebben* are the first bare forms[26]. It should be noted that Abel and Josse use modals in the Aux+INF construction before using them in the bare form. Another observation is that all of these children overgeneralise the construction Aux+INF with the verb *is,* and this takes place before the productive use of finite verbs. Some children overgeneralize that construction also with the verbs *heb* and *doe* but this occurs later, in most cases when finite verbs are already used productively.

The modal auxiliaries and the dummy auxiliaries *zijn* and *gaan* are used in a consistent way by the five children. The frequency of the dummy auxiliaries *zijn* and *gaan* gradually diminishes but they do not disappear. One might have expected that dummy auxiliaries cease to be used, once children have discovered that finite sentences can be produced by placing thematic verbs in initial position. In order to explore why that does not happen, the use of (dummy) auxiliaries is investigated in the next subsection in relation to the thematic verbs that appear in initial position.

[26] When '*hebben'* occurs as a bare verb expressing possession it has the properties of a copula in a locative sentence (this goes back to Benveniste, 1966), in which the possessed element is at the possessor. One of the consequences is that '*hebben'* is a nonthematic verb that cannot be passivized.

Table 2-4. Occurrence per child of bare nonthematic and light verbs, Aux+INF constructions and finite thematic verbs; prod.= productively used; mod = modal. Those months are presented that mark a change in using new forms.

Months	Bare nonthematic and light verbs	Aux+INF	Thematic V_{FIN}
Abel			
23	heb	-	-
24	heb, doe	mod+V	-
25	heb, doe, is	mod+V	V_{FIN}
27	heb, doe, is, ga, mod	mod+V, is+V, ga+V	V_{FIN}
28	heb, doe, is, ga, mod	mod+V, heb/ga/doe+V	V_{FIN} (prod.)
Josse			
24	heb, is	mod+V, is+V	V_{FIN}
25	heb, is, doe, ga	-	V_{FIN}
26	heb, is, doe, ga	ga+V, mod+V	V_{FIN}
28	heb, is, doe, ga, mod	mod+V, is / doe+V	V_{FIN}
31	heb, is, doe, ga, mod	ga+V, mod+V, is+V	V_{FIN} (prod.)
36	heb, is, doe, ga, mod	ga+V, mod+V, heb+V	V_{FIN} (prod.)
Sarah			
18	heb	-	-
19	is, mod	-	-
22	is, mod	-	V_{FIN}
23	is, doe	ga+V	V_{FIN}
24	heb, is, doe, ga, mod	ga+V, is+V	V_{FIN}
25	heb, is, ga,	ga+V, mod+V	V_{FIN}
27	heb, is, doe, ga, mod	ga+V, mod+V, is+V,	V_{FIN} (prod.)
28	heb, is, ga, mod	ga+V, mod+V, is / heb+V	V_{FIN} (prod.)
Iris			
25	heb, is,	-	-
29	heb, is, ga	ga+V, mod+V	V_{FIN}
34	heb, is, ga, doe	ga+V, mod+V, is+V	V_{FIN} (prod.)
37	heb, is, ga, doe mod	ga+V, mod+V, is / heb+V	V_{FIN} (prod.)
Laura			
21	is	-	V_{FIN}
22	is, ga	-	V_{FIN}
23	heb, is, ga	ga+V	V_{FIN}
24	heb, is, modal	ga+V, mod+V	-
25	is, doe, ga, mod	ga+V, mod+V, is+V	V_{FIN}
32	heb, is, doe, ga, mod	ga+V, mod+V, is+V, heb+V	V_{FIN}
35	heb, is, doe, ga, mod	ga+V, mod+V, is+V, doe+V	V_{FIN} (prod.)

2.4.3. Which classes of thematic verbs occur with (dummy) auxiliaries?

Not all classes of verbs occur equally often with dummy auxiliaries. Although it has been reported (Blom, 2003; De Haan, 1987) that children tend to use different classes of verbs in RIs, periphrastic constructions and finite sentences, to our

knowledge no study has investigated which classes of verbs occur with dummy auxiliaries.

Table 2-5. Overview of the first emergence and period during which the various constructions are used with different verb (sub)classes

		State		Action		Change
		External	Internal	(+) object	(–) object	+ endpoint
ABEL	Dummy use:	(from-till)	(from-till)	(from-till)	(from-till)	(from-till)
	Zijn (is)+INF	2;11 (N=1)	- 3;01 (N=2)	2;10-3;00 (N=3)	2;03-3;04 (N=7)	-
	Gaan+INF	3;00-3;04 (N=4)		2;03-3;04 (N=26)	2;04-3;03 (N=22)	2;07-3;04 (N=10)
	Target use:	(from)				
	Finite	>2;03 (N=114)	>2;03 (N=233)	>2;02 (N=37)	>2;01 (N=42)	>2;03 (N=119)
JOSSE	Dummy use:					
	Zijn (is)+INF	2;06-3;04 (N=4)	-	2;07-3;01 (N=8)	2;06-3;04 (N=7)	2;00–2;11 (N=2)
	Gaan+INF	2;07-3;01 (N=2)	3;02 (N=1)	2;03-3;02 (N=11)	2;02-3;04 (N=20)	2;07-3;03 (N=5)
	Target use:					
	Finite	>2;04 (N=59)	>2;07 (N=194)	>2;08 (N=50)	>2;01 (N=44)	>2;02 (N=133)
SARAH	Dummy use:					
	Zijn (is)+INF	2;04-2;09 (N=4)	-	2;00-2;09 (N=3)	2;00-3;04 (N=16)	2;10 (N=1)
	Gaan+INF	2;04-2;08 (N=10)	-	2;04-3;05 (N=54)	2;04-3;05 (N=36)	2;04-3;04 (N=10)
	Target use:					
	Finite	>2;01 (N=90)	>2;00 (N=166)	>2;01 (N=47)	>2;02 (N=30)	>2;03 (N=37)
IRIS	Dummy use:					
	Zijn (is)+INF	-	-	2;10-3;06 (N=4)	2;10-3;05 (N=11)	-
	Gaan+INF	-	-	2;11-3;06 (N=7)	2;05-3;06 (N=28)	3;03 (N=2)
	Target use:					
	Finite	>2;08 (N=65)	>2;10 (N=61)	>2;10 (N=21)	>2;10 (N=31)	3;04 (N=22)
LAURA	Dummy use:					
	Zijn (is)+INF	2;01 (N=3)	2;10 (N=1)	2;02-3;00 (N=26)	2;04-2;11 (N=26)	2;11 (N=3)
	Gaan+INF	2;11-3;02 (N=2)	-	1;11-3;04 (N=24)	1;11-3;03 (N=17)	3;00 (N=1)
	Target use:					
	Finite	>1;10 (N=20)	>1;10 (N=61)	>2;04 (N=5)	>1;10 (N=8)	1;09 (N=20)

- = no occurrence; N = number of occurrences

Table 2-5 gives an overview of the occurrence of the dummy auxiliaries *zijn* and *gaan* – first emergence, frequency and duration – with different verb classes. The moment of first emergence and the frequency of finite lexical verbs in initial position are also presented in the table. One subclass of stative verbs, those indicating internal states – perception and cognition verbs – seldom occur with dummy auxiliaries. These are verbs like *believe, know, like, see* and *hear,* which refer to states of cognition (thinking, knowing, perception) regarding the surrounding world. Only the verb *zien* ('see') occurs occasionally with dummy auxiliaries. Other stative verbs expressing internal states such as *voelen* ('feel') or *houden van* ('like') are used as finite verbs in initial position by these children as early as 2;03 years of age. These verbs, like the modals and the copula *zijn*, do not occur as RIs. One other subtype of stative verbs, those which express an external state, such as the verbs *zitten* ('sit'), *staan* ('stand'), *liggen* ('lie') do occur with dummy auxiliaries. The verbs that occur most frequently with dummy auxiliaries are action verbs. Resultatives occur infrequently with the dummy auxiliary.

In Table 2-5 both the finite verb and the stem are considered targetlike when produced in V1/V2 position and when a subject is present. Since stems appear around the same time as the finite forms, it might be that they are actually finite verbs which are incorrectly conjugated due to the immature language system of the children. This coincides with De Haan et al.'s (1995) classification, in which monosyllabic verb forms (stems and finite forms) appear in front and disyllabic verb forms (infinitives) in final position.

Thus, Table 2-5 shows that the finite verbs that are used most often by these five children are internal state verbs. This is exactly the opposite from what is observed with dummy auxiliaries. Internal state verbs are the verbs that are used least often with those auxiliaries.

2.5. Discussion and conclusion

The main purpose of this study was to find out whether is, as dummy auxiliary, possibly plays a role in the acquisition of finiteness and which role that is. Another aim of this study was to establish which dummy auxiliaries are used by Dutch monolingual children. As the auxiliary verb *zijn* is claimed to play a role in Dutch L2 acquisition (Van de Craats, 2009; Verhagen, 2013), we wanted to investigate whether this auxiliary has a similar role in the L1 acquisition of Dutch as other

dummy auxiliaries, i.e., that of providing an intermediate step between the use of RIs and the use of finite verbs in V2 position.

The results show that the language development of the five children investigated is to a large extent in agreement with what is reported in earlier studies. What the present study adds is that there is a dummy *is* in L1 acquisition and that the stage of development within which the construction Aux+INF is used is not a relatively short, temporary one leading to a final stage in which finite verbs in initial position are predominantly used. What seems to happen is that both constructions (Aux+INF and V_{FIN}) are used alongside each other until age 3;6, and that verb class (co)determines which verbs are used in V2 position, and which ones remain in sentence- final position.

Table 2-6 gives the three developmental stages which were evident in our results. We base these stages on three distinct verb forms: RIs, bare verbs in initial position, and Aux+INF.

Stage 1: RIs

The five children investigated in this study started out by using RIs. First as a one-word utterance, and followed by longer utterances in which the verb appeared as an infinitive in sentence-final position, as exemplified in Table 2-6.

Stage 2: Bare (nonthematic) verbs and bare modals

Stage 1 is followed by a stage in which modals, the nonthematic bare verbs *zijn* and *hebben,* and some thematic (light) verbs like *gaan*, *doen*, start appearing at the beginning of the utterance. Most of these verbs, particularly the modals, and the verbs *zijn* and *gaan,* which have little meaning of their own*,* behave differently from the thematic verbs. They do not appear as RIs. Children use them from the beginning in their finite form and in the right place in the sentence. So, knowledge that the finite verb must be placed in left-peripheral position (V1 of V2) is acquired very early. From the moment they start using finite verb forms, all children consistently use them in initial position. At this stage, other types of thematic verbs are seldom used in sentence initial position.

Stage 3: The construction Aux+INF plus thematic verbs in initial position

In this stage some other thematic verbs, mainly statives and resultatives start occupying the same initial position as the bare nonthematic verbs. At the same time, children start using the periphrastic construction Aux+INF. Aux is filled in with

modals, the copula *zijn*, the auxiliary verb *gaan*, and, sporadically and much later, with the verbs *doen* and *hebben*. When Aux is filled in with modals or the auxiliary *gaan*, this generally results in a grammatically correct utterance, whereas in other cases, when the Aux is filled in with the auxiliaries *zijn*, *hebben* or *doen*, the produced utterance is grammatically incorrect.

Table 2-6. Stages in the acquisition of finite thematic verbs in initial position

Stage	Child + age	Example	
Stage 1: RIs	Sarah 1;06	*Ik sitte.*	(I sit.INF)
	Abel 2;01	*Ik ook een kleurboek kopen.*	(I too a colourbook buy.INF)
Stage 2: Bare nonthematic and sporadically thematic verbs in initial position	Sarah 1;07	*Dese is op.*	(this is.FIN up; 'This is finished/ready')
	Josse 2;01	*Koekje moet daar.*	('cookie must.FIN over there.')
	Laura 1;09	*Valt daa(r).*	(falls.FIN there)
Stage 3: Aux+INF (action verbs) and productive finite thematic verbs (stative and resultative) in initial position	Abel 2;03	*Kan niet zoeken.*	(can not search.INF)
	Abel 2;03	*Ze passen niet.*	(they fit.FIN not; 'they do not fit')
	Iris 3;06	*Daar staat nog een stoeltje.*	(there stands.FIN another little chair)
	Iris 2;08	*Hier zit ie in vliegtuig.*	(here sits.FIN he in the airplane)

It is important to notice that both constructions become productive, that is they start both to be used five or more times in the same sample, around the same time. A detailed look at the several Aux+INF constructions can shed light on the actual role of the different (dummy) auxiliaries.

Table 2-6 makes it clear that although all dummy auxiliaries appear in the same stage, they do not appear simultaneously and are not used to the same extent, suggesting that they may play different roles in the acquisition of finiteness. The (dummy) auxiliaries *is*, *gaat* and the modals are pioneers in this phase and are the auxiliaries that are most frequently used by all five children. The auxiliary *gaan* and the modals seem to be bootstrapped by language input, since all of them are permitted and used abundantly in adult standard Dutch. The dummy auxiliary *gaan* –the most frequently used dummy– is, in addition, stimulated by child-directed speech. Klein (1974) reported that Dutch mothers often use the Aux+INF construction, including this (dummy) verb when talking to children.

The dummy auxiliary *is* appears for most children approximately one or two months later than the modal+INF and *gaan*+INF, and could be an overgeneralization of those two constructions. It can be hypothesised that the copula *is*, being so

prominent in the Dutch language, and - as shown in the results of the present study - also in the language of young children, triggers the use of the dummy *is*.

The dummy auxiliary *doen* appears slightly later. Taking into consideration that four of the five children use the dummy *doen* considerably less often than the dummies *is* and *gaan*, it can be assumed that its role is less significant in the acquisition of finiteness. The fact that only one of the children (Abel) uses this dummy often (eleven times) while the other four children barely use it (Josse and Sarah use it three times, Laura twice and Iris only once) suggests that environmental factors, such as dialectal differences (see also Zuckerman, 2013), rather than child attempts to cope with the language system being learned, play a role in the use of this auxiliary as dummy. This is a less plausible explanation in the case of Abel, since he grew up in Amsterdam, where dummy *doe* is not used. Though, this dummy is used south-east of Amsterdam (Barbiers, 2013: Map 1). Another explanation for the use of the dummy *doen* is that it is sometimes triggered by a question from the speech partner as the following example of Abel at 3;0 years of age illustrates.

(7)	Abel's speech partner:	*Wat*	*deed*	*je nou?*
		what	do.PAST	you now?
		'What did you do?'		
	Abel:	*Ik*	*doe*	*vallen*
		I	do.1SG/STEM	fall.INF

The dummy auxiliary *hebben* is used later than the other dummy auxiliaries. Abel and Sarah however, produced this construction fairly early. At the age of 2;4 utterances like those in (8) were attested.

(8)	a	*Ik*	*heb*	*niet*	*zoeken.*		(Abel 2;4)
		I	have	not	search.INF		
		'I do not search. / I am not searching.'					
	b	*(I)k*	*heb*	*sien*	*uile(n)*	*op? dak.*	(Sarah 2;4)
		I	have	see.INF	owls	on the roof	
		'I have seen owls on the roof.'					
	c	*Die*	*hebben*	*we*	*bouwd.*		(Abel 2;4)
		those	have	we	built.FIN		
		'We have built those.'					

Example (8a) seems to be a real dummy, since Abel is expressing an action in the present. Example (8b) is perhaps an attempt at producing the participle *gezien* ('seen'). The difficulty in producing the correct form could be due to morphological

and phonological immaturity (sound or syllable deletion) inherent to the child's phonological stage of development. So, instead of producing the full construction Aux+Participle as in *Ik heb gezien* ('I have seen'), Sarah produces the more simple but ungrammatical construction Aux+INF as in *Ik heb zien* (I have see.INF; 'I have seen'). Recall that the constructions that fall under category Aux+NONF of the coding system used in this analysis (see Table 2-3) are not only the construction *hebben*+INF but also *hebben*+FIN.SG and *hebben*+STEM. Many of the utterances produced by these children are of the last two types. Example (8c) illustrates the combination *hebben*+FIN.SG. In both examples (8b) and (8c) Sarah and Abel are expressing events and actions which have been completed. A closer look at the use of the 'dummy' *hebben* by all five children led us to the conclusion that what seemed to be finite and infinitival forms are actually attempts to produce a participle, in which case the verb *hebben* should not be categorised as a dummy auxiliary, but as an auxiliary expressing tense/aspect.

We can now give two affirmative answers to the first two research questions. The first one was whether auxiliaries in general show up before lexical finite forms are used productively. They do, and this leads us to the assumption that they have a pivotal function in the acquisition of finiteness. The second question was whether the dummy auxiliary verbs *zijn*, *doen*, and *gaan*, and the modal verbs emerge simultaneously, in such a way that they are clearly part of the same developmental stage. The answer is affirmative: They seem to be part of the same stage. The use of the dummy *doen* seems to depend on the context of interaction or on regional differences. The dummy *gaan* occurs most probably due to children's inability to understand its inchoative meaning. The verb *zijn* similarly to the modals and in contrast to the verbs *doen* and *gaan* does not appear as RI. It starts to emerge as bare verb in sentence-initial slots and is the most frequently used bare verb. This high frequency of use, probably in combination with the fact that children hear this verb in the construction '*zijn* + *aan het* + INF', seems to give rise to the dummy auxiliary is. In the light of these findings we are inclined to think that this auxiliary has a unique role in the acquisition of finiteness. The auxiliary *hebben* was included in our data analysis and it turned out to have another role, that of an auxiliary expressing tense/aspect.

The third research question was about the role of particular classes of lexical verbs. Is there a substantial difference in the frequency with which particular classes of lexical verbs occur in combination with dummy auxiliaries? The data shows that

in four of our five children (Abel, Josse, Sarah and Iris) a sudden proliferation of finite verbs in initial position takes place between 2;3 and 2;10 years of age. A close analysis of the data makes it clear that the finite verbs in V1/V2 do not belong to the same class as those in final position. We observed mainly stative verbs in initial position and action and change verbs in final position. Of those stative verbs, the majority were internal state verbs, i.e. cognition verbs like *horen* ('hear'), *zien* ('see') and *weten* ('know'). These verbs, with a few exceptions, do not occur in the infinitival form nor do they occur in complex predicates of the type Aux+INF. The other group of stative verbs used by these children in the period covered by the analysis were those expressing external states (posture verbs such as *zitten* ('sit'), *staan* ('stand'), and *liggen* ('lie'). They were produced in smaller numbers (and used with dummy auxiliaries) than the internal state verbs. One other observation is that the increase of finite verbs in initial position goes hand in hand with an increase of the Aux+INF construction. Two things seem to be happening simultaneously: Increasingly more finite stative verbs occupy the V1/V2 position, and the RIs used in final position remain in that position and are combined with an auxiliary verb producing complex predicates of the type Aux+INF. That means that the increase of the V2 pattern does not reflect verb fronting. The data reveals that the majority of the verbs (RIs) used in the initial stage in final position remain in that position, at least until age 3;6. The auxiliary system allows this to happen. The verbs in initial position are, most likely, directly retrieved from the lexicon and inserted in the V1/V2 slot. According to Blom and Wijnen (2013), these finite verb forms are initially unanalysed, and consequently, the morphological marking of finiteness at this stage is not yet productive.

Our findings provide evidence that movement of the thematic verb in sentence-final position to the V1/V2 position is limited in this stage, if not excluded at all. We believe, in accordance with other researchers such as Van Kampen (1997) and Zuckerman (2001), that children use the Aux+INF construction as a mechanism to avoid movement. Both economy (the possibility of minimizing movement operations) and the language input (auxiliary system) allow lexical verbs to remain in final position. The results of the present analysis indicate, however, that this strategy is not as temporary as Van Kampen (1997) suggested. It is important to investigate in more detail why certain verb classes are difficult to move and what contributes to the eventual acquisition of V2 for those verbs.

What does a child need to know to be able to move lexical verbs, especially action and resultative verbs, to V2? The child has to (1) learn that the finite marking

falls on the leftmost verbal item, (2) realize that this verbal item carries both temporal/aspectual and person/number agreement information and (3) realize that lexical verbs can be moved from sentence-final to the second position in the sentence. The five children studied seemed to have learned (1) and (2) very early. This finding corroborates findings by other researchers (Blom, 2003; Zuckerman, 2001). What remains to be learned is (3) the movement of the lexical verb to V2. The third research question evidently receives an affirmative answer, but this has as a consequence that we have to find an explanation for the varying degrees of difficulty of acquiring finiteness in relation to the different classes of lexical verbs.

It is plausible that semantic as well as morphological and syntactic factors play a role in determining the ease with which verbs move to V2. Analyses of adult and child language show that finiteness in both children and (native) adults varies per verb class and type. Children's use of finite and nonfinite forms correlates highly and significantly with that of (native) adults (Schlichting, 1996). One of the determinants in using the finite form or nonfinite form of a verb mentioned by Schlichting is the semantic transitivity of a verb. According to Schlichting and Wijnands (1992), prototypical transitive verbs whose object registers a change caused by the action of the verb, like *bouwen* ('build') are mainly nonfinite; cognition verbs, which have no real direct object in the sense that they do not register such a change, e.g. *zeggen* ('say'), are mainly finite. In these cognition verbs it is rather the subject that experiences a change (Givón, 1984: 100).

Our findings indicate that transitive activity verbs, whose object is affected by the action of the verb, such as bouwen ('build'), do not easily move because the presence of the object causes an extra complexity – the verb has to move 'over' the object, as it were, in order to reach the V2 position. As a consequence of this operation the linearity changes: OV changes into VO. This movement operation probably requires more working memory than when no interfering element is around. We therefore predict that transitive activity verbs will be the last to be fronted. 'Weaker' or slower learners, e.g., because of ear infections and accompanying reduced hearing, will use them with (dummy) auxiliaries during longer periods than typically developing children. We found such an effect for Laura and Iris. Recall that these are the two children who had middle ear problems. At the ages covered by this analysis these two children, just as the other three children, had already started using some verbs in initial position. However, Laura and Iris used finite action verbs with an object considerably less often than the other types of verbs. Laura used only two finite action verbs with an object, as opposed to 42

action verbs with an object in the construction Aux+INF (the construction modal+INF is excluded from the counts). She used 21 action verbs without an object and six resultative verbs with the construction Aux+INF. Iris also used very few finite action verbs with an object; only six as opposed to 25 of that type of verbs in the construction Aux+INF. That is considerably more than the other types of verbs used in the construction Aux+INF. Iris used only three external and two internal state verbs, 17 action verbs without an object and eight resultative verbs.

The proportion of action verbs with an object in both constructions for the other three children is as follows: Sarah used 45 of this type of verbs in the Aux+INF construction and 22 in the finite form; Abel used 38 of them in the Aux+INF construction and 14 in the finite form. Josse used 40 of this type of verbs in the Aux+INF construction and 15 in the finite form. The conclusion is that Laura and Iris, indeed, used finite action verbs with an object less often than the other three children, which supports our hypotheses that action verbs with an object may be more difficult to move than other types of verbs and that children whose development is delayed may take longer to move them to the V2 position. They, therefore, use dummy auxiliaries during a longer period of time than children with typical language development (De Jong et al., 2013). Further study is needed to test this hypothesis.

Some researchers offer a purely semantic explanation of the prolonged use of the Aux+INF construction. Jordens (1990) and Zuckerman (2001) proposed that the use of the periphrastic construction Aux+INF decreases in favour of systematic verb fronting as soon as the child acquires the semantic difference between particular Aux+INF patterns and their corresponding verb finite alternatives. The data from these five children presents a counterargument to this proposal. This data shows that even after they have started using some thematic verbs in initial position, children still have not grasped the semantic difference between this use and the use of the same verbs in the construction Aux+INF. That is, these children do not seem to understand the difference between for instance, *Hij gaat zien* ('He is going to see') en *Hij ziet* ('He sees/is seeing'). Zuckerman's study (2001, 2013) with Dutch speaking children ages 2;9 - 8;3 reveals that monolingual Dutch speaking children aged 3 to 4 optionally interpret the *gaan*+INF construction as indicating an ongoing event instead of indicating future or inchoativity as in Dutch standard grammar. Zuckerman's research further shows that, although older monolingual five to eight year olds perform better than younger children, they still have problems with the interpretation of the auxiliary *gaan*. We claim that this long lasting optional use of

the construction *gaan*+INF is an indication that children continue to use this construction because they perceive it as equivalent in meaning to the construction with the finite verb in V2 position and, therefore, choose the one that is structurally easier and does not require fronting of the lexical verb. The (dummy) auxiliary seems to be used to mark a syntactic position and seems to have no meaning in the early acquisition of Dutch language by monolingual children.

Several clear conclusions can be drawn from the data above. The analysis showed that all five children not only used the dummy auxiliaries that are the most emphasized in the literature – *gaan* and *doen* – but also the dummy auxiliary *zijn*. The construction *zijn*+INF is used by all five children during a period ranging from nine to 17 months, and far more frequently than the often mentioned auxiliary construction *doen*+INF, which only appears sporadically. Just like adult L2 learners of Dutch, monolingual Dutch speaking children use free morphology to mark a syntactic relationship, and to realize person and number features separately from the thematic verb. The dummy auxiliaries *zijn* and *gaan* and the modals play a significant role in that process. We want to go one step further and suggest that it is the copula *zijn* that sets off the process of acquisition of finiteness. Due to its frequency in the environmental input and its early sentence-initial appearance as a connecting element between subject and predicate, *zijn* plays a paramount role in raising the child's awareness of a sentence-initial verbal slot. The *zijn*+INF construction is brought about by this intensive use of the bare *is*. *Zijn*+INF, being the only auxiliary verb construction absent from the input, provides direct evidence that the periphrastic Aux+INF construction is an unconscious strategy to avoid verb movement and not an imitation of a pattern existing in the environmental input. The fact that other candidates for dummy use, such as the verbs *doen* and *hebben,* are seldom used by these children as dummy auxiliaries, can be seen as evidence supporting this claim.

3. Meaning and function of dummy auxiliaries in adult acquisition of Dutch as an additional language

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Abstract

This article presents the results of experimental data on language production and comprehension. These show that adult learners of Dutch as an additional language, with different language backgrounds, and a L2 proficiency below level A2 (Waystage) of the Common European Framework of Reference for Languages (CEFR), use dummy auxiliaries as a structural device and interpret them as semantically vacuous. Proficiency level in the target language, more than language background, seems to determine the occurrence of dummy auxiliaries, and also which dummy auxiliary is used. Participants at a lower level of language acquisition use both dummy auxiliaries zijn ('be') and gaan ('go'), whereas more advanced learners continue using predominantly dummy auxiliary gaan. These findings suggest that both dummy auxiliaries have a trigger function in setting the step from nonfinite utterances, to utterances with dummy auxiliaries carrying morphological information, and finally to utterances in which the morphological information is carried by the finite lexical verb.

3.1. Introduction

3.1.1. General introduction

Dummy auxiliaries are non-grammatical forms often attested not only in the learner varieties of adult learners of Dutch as an Additional Language (DAL) (Blom and De Korte, 2008 and, 2011; Cornips, 2013; Hulk and Cornips, 2005; Lalleman, 1986; Starren, 2001; Van de Craats, 2009; Van de Craats and Van Hout, 2010; Verhagen, 2009, 2011 and 2013), but also in learner varieties of other target languages such as French and German (Schimke, 2013), and English (Fleta, 2003; Huebner, 1989; Huebner, Carroll, and Perdue, 1992; Zobl, 2002). They have also been observed in child L1 and L2 acquisition of Dutch, English and German (García, Ibarrola and Liceras, 2005; Haberzettl, 2003; Hollebrandse, Van Koert and Van Hout, 2013;

Jordens and Dimroth, 2006; Julien, Van de Craats and Van Hout, chapter 2; Tracy, 2002; Zuckerman, 2001), suggesting that the occurrence of dummy auxiliaries may be a general, rather than a language-specific step in language acquisition.

The use of dummy auxiliaries is often related to verb movement; compare Chomsky's (1995) Economy Principle. Dummy auxiliaries are assumed to be easier to access than lexical verbs because, due to their high frequency, they are stored in their inflected form in the mental lexicon, from where they can be directly retrieved and inserted in the position of a functional head. Production of lexical verbs in the same position, on the other hand, requires movement - which is considered a more costly operation. Van Kampen (1997) and Zuckerman (2001; 2013) observed that monolingual Dutch children use dummies in main sentences - which require verb movement - and that dummies in subordinate clauses – where verb movement is not required - are very rare. Blom and De Korte (2011), Van de Craats (2009) and Van de Craats and Van Hout (2010) studied, respectively, the learner varieties of Dutch L2 Turkish speaking children and adult Turkish and Moroccan Arabic speaking DAL learners, and concluded that dummy auxiliaries, more in particular *gaan* ('go') and *zijn* ('be'), precede movement of the lexical verb and constitute a structural device that does not require movement and that helps the learner to open a position in the sentence for verbs to move to.

Other researchers, such as Dimroth et al. (2003), Jordens and Dimroth (2006), Starren (2001), and Verhagen (2009) offer a primarily semantic account for the use of *zijn*+INF and *gaan*+INF. They claim that (dummy) auxiliaries, just as modals, are carriers of both the morphological properties of finiteness and the illocutionary function of an assertion. In her longitudinal study of language production data from two Turkish and two Moroccan learners of Dutch, Starren (2001) observed that, after an initial phase in which adverbs are used to express tense and aspect, they are replaced by forms of the auxiliary verb *zijn,* which *s*he terms *proto-auxiliaries.* She concluded that her learners use those proto-auxiliaries to encode topic time (in pre-subject position) and perfect aspect (in post-subject position).

Zuckerman (2001; 2013) and Verhagen (2013) investigated respectively the comprehension of dummy auxiliary *gaan* by monolingual children acquiring Dutch and dummy *zijn* by Moroccan DAL learners. They came to the conclusion that learners, in early stages of their acquisition of Dutch, ascribe imperfective meaning to those two dummy auxiliaries, rather than prospective (*gaan*) or perfect (*zijn*).

From the above, it is clear that there is no consensus as to the function and meaning of dummy auxiliaries. The overarching research question that we want to

answer in the present study is whether dummy auxiliaries are devoid of meaning and are used by adult DAL learners as a structural device that helps them acquire the proper morphological marking of agreement, as claimed by Van de Craats (2009) and Van de Craats and Van Hout (2010).

This study contributes in three ways to what we know from previous research on this topic. One is that not only Turkish and Moroccan Arabic speakers were the objects of study, but also speakers of Berber Tarifiyt were included. This group of learners has not been systematically distinguished from the Moroccan-Arabic speakers in previous studies. Tarifiyt speakers constitute approximately 60% of the Moroccan population in the Netherlands (El Aissati et al., 2005). The second contribution is that not only the production, but also the comprehension of (dummy) auxiliaries in Dutch was studied. The aim of studying both production and comprehension was to provide a deeper insight to the question whether learners assign meaning to dummy auxiliaries or not. To our knowledge only Zuckerman (2001) and Verhagen (2013) have addressed the comprehension of dummy auxiliaries. The third contribution is the diversity in elicitation tasks, to trigger the use of dummy auxiliaries in different contexts and to test factors which may inhibit or enhance the occurrence of dummy auxiliaries. In addition, we have drawn a larger sample of learners than other studies on adult DAL learning did so far, with the exception of Verhagen (2009; 2013).

The outline of the paper is as follows. We start by describing the relevant markers of temporality in the four languages involved in this study and by presenting the research questions. Section 3.2 explains the experimental framework and the methods for data collection and analysis. This is followed by the section 3.3, in which the results are presented. Section 3.4 discusses the main findings and presents the conclusions.

3.1.2. Markers of temporality and the concept of dummy auxiliaries

Investigation of the source of deviant forms in the learner varieties cannot be carried out without considering the possibility that those errors are produced under influence of the languages involved. Van de Craats and Van Hout (2010) have put forward the hypothesis that dummy *gaan* could be the result of interference from L1 Moroccan Arabic, since that language has a real auxiliary which is, qua form and meaning, very similar to the auxiliary *gaan* in Dutch. Dummy *zijn* is assumed by

them, by Julien et al. (chapter 2) and by Verhagen (2013) to originate from the Dutch language itself, under the influence of the extensively used copula *zijn*.

Table 3-1. Markers of temporality in Dutch, Tarifiyt, Moroccan-Arabic and Turkish

Basic order	**Prospective**	**Imperfective**	**Perfect**	**Perfective**
Dutch (SOV)	*gaan*+INF	• zijn+aan het+inf • present tense • posture verbs+INF	*zijn/hebben* +PPART	• simple past • *zijn/hebben* +PPART
Tarifiyt (VSO)	• ad+AOR • traḍ+ad/ġa+AOR • qa+traḍ+ad/ġa +AOR	*qa*+IMPRF	*qa*+PRF	PRF
Moroccan Arabic (SVO)	*ġādi*+IMPRF	*ka (ta)*+IMPRF	active PART	PRF
Turkish (SOV)	stem+ -(y)acak/ ecek	stem + *-yor*	stem + *-DI*	stem + *-DI*

Note: AOR = aorist; IMPRF = imperfect; INF=infinitive; O = object; PPART = past participle; PRF = perfect; S = subject; V = verb.

A description of relevant linguistic means for the expression of temporality in the languages involved in the present study is presented in Table 3-1 (the same as Table 1-2 in chapter 1). The temporal framework of Klein (1994) was adopted to distinguish the aspectual categories of prospective, imperfective, perfect and perfective.

Table 3-1 shows how different the four languages involved are in expressing aspectual distinctions. Turkish uses mainly synthetic forms (Göksel and Kerslake, 2005), whereas the other three languages often make use of analytic forms. In Tarifiyt (El Aissati, 1994, 2001; E-Rramdani, 2003) and Moroccan Arabic (Harrell, 1962; Hoogland, 1996) perfect and perfective aspects are expressed each with a different form, whereas Turkish has only one form for both aspects. Dutch is peculiar in that it has two forms to express perfective aspect, one of them being the same as the form used to express perfect aspect (Klein, 1994). Further, Tarifiyt has different forms to express prospective aspect, and Dutch has multiple ways of expressing imperfective aspect.

Since the present study concerns the acquisition of agreement marking on the finite verb in Dutch, a more detailed description is given below.

(1) Stage 1 * *Jan* [$_{VP}$ *naar de kerk* *lopen*]
Jan to the church walk.INF
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 2 [$_{CP}$ *Jan* [$_{C}$ *gaat* [$_{VP}$ *naar de kerk* *lopen*]]]
Jan go.3SG to the church walk.INF
'Jan is going to walk to the church.'
Target: Jan loopt naar de kerk.
Intended meaning: Jan walks to the church.

Stage 3a [$_{CP}$ *Jan* [$_{C}$ *loopt*$_{i}$ [$_{IP}$ [$_{VP}$ *naar de kerk* t_i]t_i]]]
Jan walk.3SG to the church
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 3b [$_{IP}$ *Jan* [$_{I}$ *loopt*$_{i}$ [$_{VP}$ *naar de kerk* t_i]]]
Jan walk.3SG to the church
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 4 [$_{CP}$ *Hier* [$_{C}$ *loopt*$_{i}$ [$_{IP}$ *Jan* t_i [$_{VP}$ *naar de kerk* t_i]]]]
Here walk.3SG Jan to the church
'Here Jan walks to the church.'
Target: Hier loopt Jan naar de kerk.

Note: stage 3a is according to ten Besten/Koster (1975); stage 3b is according to Zwart (1997)

Dutch main clauses have the special property that the finite verb occupies the second position, irrespective of which constituent occupies the first position. This property is known as Verb Second (V2). In the standard generative analysis the V2 order is derived from an underlying structure in which the verb is in head-final position (SOV) within the Verb Phrase (VP). Through head-to-head movement from verb (V) to Inflection (I), the finite verb ends up in the complementizer (COMP or C) position (cf. Den Besten, 1989; Koster, 1975), or in I (AGR/T) (see Zwart, 1997). If a constituent other than the subject is moved to the Spec,C position, the result of this movement is that subject and the finite verb appear in the opposite order. This is often called subject-verb inversion (see Stage 4 in (1)).

An example of the stages various types of learners go through, with dummy auxiliary (Stage 2) and without dummy auxiliary insertion (skipping Stage 2), is provided in (1).

Dutch has a two-way system - past and non-past – to grammaticalise tense. Aspect is often expressed through auxiliaries and constructions with a posture verb or with the prepositional phrase *aan het V ('on the V')*, where V stands for a verb in infinitival form. The aspectual auxiliary occupies the second position and the lexical verb, in the infinitive, a sentence-final position. *Prospective aspect* is commonly expressed with the auxiliary *gaan* in combination with the lexical verb in the infinitive as illustrated in (2).

(2)	*Jan*	*gaa-t*	*zijn vriend*	*roepen*
	Jan	go-PRES.3SG	his friend	call.INF
	'Jan is going to call his friend.'			

The simple present tense, as well as posture verb constructions and constructions with an adjective or preposition can be used to convey *imperfective aspect.* In (3a) - (3c) examples are given of each of these constructions.

(3) a Simple present

Moeder	*bouw-t*	*een toren*
Mother	build-PRES.3SG	a tower

'Mother builds / is building a tower.'

b Zijn + aan het + INF

Zij	*is*	*een toren*	*aan het*	*bouw-en*
She	be.PRES.3SG	a tower	at the	build-INF

'She is (in the process of) building a tower.'

c Zijn + INF

Moeder	*is*	*werk-en*
Mother	be.PRES.3SG	work-INF

'Mother is (not here) working.'

Flecken's study (2011) reveals that the *aan het* INF construction (3b) is widely used by adult Dutch native speakers. The last construction (3c) is less frequent than the other constructions. It has the very specific meaning of somebody doing something not in the vicinity of the speaker, and is, in general, not used with verbs requiring an object or having a clear endpoint.

Perfect aspect is expressed with the construction *zijn* ('be') / *hebben* ('have') + past participle.[27] Example (4) illustrates this.

(4) a *Peter* *is* *aangekomen*
Peter be.PRES.3SG arrive.PPART
'Peter has arrived'.

b *Moeder* *heeft* *een toren* *gebouwd*
Mother has.PRES.3SG a tower build.PPART
'Mother has built a tower.'

Perfective aspect is expressed by using the simple past, as in example (5), or the construction *zijn* ('be') / *hebben* ('have') + Past Participle as examples (6a) and (6b) illustrate.

(5) *De poes* *at* *de vis*
The cat eat.PAST.3SG the fish

'The cat ate the fish.'

(6) a *Ik* *heb* *in* *het park* *gelopen*
I have.PRES.1SG in the park walk.PPART
'I walked in the park.'

b *Ik* *ben* *naar* *het park* *gelopen*
I be.PRES.1SG to the park walk.PPART
'I walked to the park.'

3.1.3. Research questions

As stated in the introduction, the main inquiry in this study is whether dummy auxiliaries are indeed devoid of meaning and used by adult DAL learners as a structural step in the acquisition of finiteness, as claimed by Van de Craats (2009) and Van de Craats and Van Hout (2010). In order to answer that overall question, we address the following specific research questions:

[27] Auxiliary *hebben* ('have') is used with all transitive, ditransitive, and a considerable number of intransitive verbs. Unaccusatives select the auxiliary *zijn* ('be').

1. Do low-proficient adult DAL learners use dummy auxiliaries?
   The expectation is that dummy auxiliaries will be found in the present study since they have often been attested in (early) learner varieties of adult DAL learners.

2. Does level of language proficiency in Dutch influence the choice and frequency of dummy auxiliaries?
   Previous research has shown that L2 children and adult learners of Germanic languages use very few dummy auxiliaries in the initial stage of language acquisition, and that dummy use increases as learners' exposure to the target language increases, decreasing again later on while finiteness is being acquired. Huebner (1989), Haberzettl (2003), Van de Craats (2009) and Van de Craats and Van Hout (2010) showed in their studies the emergence, increase and decline of the *is/ist*- and *ga/gaat*-patterns in relation to increasing proficiency in the target language. That pattern appeared between a stage in which the lexical verbs were uninflected (in German and Dutch the word order at that stage was mainly SOV) and a stage with inflected verbs (in German and Dutch the word order was SVO). In Van de Craats' study *(*2009) participants began to produce *is*-constructions about nine months after having started receiving formal L2 input, increased their use in the next nine months and, in the case of some participants, decreased in the third period of nine months that followed.
   In the light of these findings, the same pattern can be expected in the present study. It is predicted that the number of dummy auxiliaries produced by participants who have a lower level of proficiency will be lower than the number produced by the participants with a higher proficiency level.

3. Does language background determine the choice of dummy auxiliary?
   Previous research (Van de Craats, 2009) has shown that Turkish learners of Dutch mainly used the dummy auxiliary *zijn,* and Moroccan Arabic learners had a preference for the dummy auxiliary *gaan* (Van de Craats and Van Hout, 2010). On the basis of these findings, it is predicted that the choice of dummy auxiliaries will differ among the three language groups participating in this study. It is further hypothesized that correct, aspectual use of the construction *gaan*+INF will be acquired faster by the Arabic speaking group than by the other groups, since that language has a construction (*ġādi* ('go') + IMPRF) that resembles, in form and meaning, the Dutch prospective construction.

4. Do adult DAL learners, in the initial stages of language acquisition, assign meaning to the constructions *zijn*+INF and *gaan*+INF?
   Given the results of Zuckerman's (2001) and Verhagen's (2013) studies, in which it was found that L1 children and Moroccan learners of Dutch ascribe present tense reading to respectively *gaan*+INF and *zijn*+INF, our prediction is that the participants in the present study will also include the imperfective aspect when assessing the meaning of these two dummy auxiliary constructions. If dummy auxiliaries are devoid of meaning for learners, no distinction will be made between utterances with dummy auxiliaries and utterances containing the present tense.

3.2. Method

3.2.1. Participants

The participants were 40 adult learners of Dutch, five male and 35 female, who came to the Netherlands after their sixteenth year of life.They spoke Moroccan-Arabic, Berber-Tarifiyt, or Turkish as their L1, and were acquiring Dutch at various training centres in cities of the Randstad (the metropolitan region in the western part of the Netherlands), and in cities in the eastern part of the Netherlands.

All participants had a low level of proficiency in Dutch and were attending Dutch classes aimed at attaining levels A1 (Breakthrough) and A2 (Waystage) of the CEFR[28]. Their L2 oral proficiency was rated by experienced language teachers, who assigned them to one of the two groups mentioned above. Assessments based on CEFR are aimed at evaluating communicative rather than grammatical skills. All participants were reported by the teachers as not yet having fully acquired verb inflection and placement in Dutch.

All three participant groups had a low educational level. None of them had attended university and six of them had never attended school. Most of the participants had some knowledge of one or more other languages than their L1 when they started learning Dutch. The languages that they understood and/or spoke to various degrees of proficiency were English, French, Kurdish or Spanish. Seven of the Tarifiyt speakers had also command of spoken or written Arabic. Their command varied from only understanding it (four participants) to speaking it with

[28] CEFR stands for Common European Framework of Reference for Languages.

varying degrees of fluency (five participants). One participant could only read and write it. The socioeconomic status (low), in the Netherlands, of these three groups of immigrants, as well as their history of migration, are comparable (Crul and Doomernik, 2003; Roes, 2008; Scheele, Leseman and Mayo, 2010).

Table 3-2 gives an overview of the characteristics of the 40 participants divided into language background and proficiency level in Dutch.

Table 3-2. Most relevant learner characteristics: Range (min-max); Mean (M) and SD

L1	**Level**		**Age**			**Length of residence (years)**			**Length of instruction in Dutch (years)**		
	A1	A2	range	M	SD	range	M	SD	range	M	SD
Tarifiyt	6	4	30-49	38	7.6	0.7-33	13.2	11	0.5-4	1.9	1.4
Arabic	5	5	26-50	32	6.7	1-17	7.0	5.3	0.5-4	1.5	1.4
Turkish	7	13	21-54	37	10	1-28	7.1	6.4	0.7-6	1.7	1.9

Elicitation tasks

Table 3-3 shows the three production experiments and the comprehension experiment that were administered to the participants.

Table 3-3. The experiments in this study

Experiment	Type of task	Mode	Number of items
1	Multiple choice (meaning interpretation)	comprehension	
	(a) prospective		19
	(b) imperfective		18
	(c) dummy		19
2	Narrative (meaning)	production	
	(a) prospective		16
	(b) imperfective		16
	(c) perfect		16
3	Completion syntax	production	
	(a) no-inversion order (SV)		23
	(b) inversion order (XVS)		24
4	Completion morphology	production	
	(a) present tense		34
	(b) past tense		34

This set of experiments, all of them eliciting the third person singular, was designed not only for adult DAL learners, but also for monolingual and bilingual children acquiring Dutch, who took part in a bigger study on this subject.

Both the comprehension task and the Narrative task were designed to test whether aspectual meaning is involved in the constructions *zijn*+INF and *gaan*+INF. The tasks consist of looking at film clips, and at three pictures extracted from each film, which are presented on the screen immediately after the film. The first picture shows the image one fraction before the beginning of an action or state, the second picture shows the action/state itself and the third picture shows the end of the action/state.

The sentence completion task 'Syntax' was developed to answer the question whether the number of dummy auxiliaries produced increases as the number of syntactic steps required to get an inverted (XVS) order increases. This was the case in Blom and De Korte's study (2011), but only with respect to children. They produced more dummy auxiliaries in sentences with than without inversion. Adult DAL learners who took part in that same study did not produce sentences with inversion, presumably due to their low level of proficiency in Dutch. In view of those results, the participants in the present study were not expected to realize inversion consistently, since their level of proficiency in Dutch is below A2. Nevertheless, the task was administered to observe their use of dummy auxiliaries in that context. The sentence completion tasks 'Present tense' and 'Past tense' were developed to investigate the relationship between morphological skills (inflection) and the use of dummy auxiliaries.

3.2.2. Materials

The verbs used in the experiments were divided into four classes based on lexical aspect (Aktionsart), that is, their durative nature, argument structure and the possible presence of an adverbial or an object in the sentence signaling an endpoint to the action or state. Vendler's (1957) four-way classification was the basis for the categorization of the verbs used in this study. These verbs were also grouped on the basis of morphological regularity and presence of a verbal particle.

Short clips and pictures taken from the television series ***Pingu*** were used (see footnote 7). The programme DVDx 4.0 was used to rip the DVD *Pingu voor altijd* ("Pingu forever") (The Pygos Group and Hit Entertainment Limited, 2010).

Afterwards clips were made out of the converted DVD using the software programme Virtual Dub 1.9.

3.2.3. Procedures

Participants were tested individually in a quiet room, in the centre where they were studying. The tasks were presented to them in a laptop using the software programme E-prime 2.0 (Schneider, Eschman and Zuccolotto, 2001). Depending on the task, each participant was instructed to match a picture with a stimulus utterance, which they heard via the laptop's loudspeaker, or to describe an event on a film clip and/or an action depicted in a picture, or a picture sequence, presented to them in the laptop (see 1.6.1). The E-prime programme allowed not only a randomisation of the test items in the experiments, but also the recording of the participant's responses. In the language comprehension task the E-prime's function to record accuracy of response was used.

We analyzed the data using the software programmes Microsoft Excel 2007 and IBM SPSS 21. All the utterances produced by the participants were orthographically transcribed. Transcription conventions used were taken from the transcription system of CHAT (Codes for the Human Analysis of Transcripts) (MacWhinney, 2000).

A coding system in which all types of verbal constructions produced by the participants were included was designed for all four experiments. The coding system consists of ten categories, each representing a certain type of construction and its variants.

3.3. Results

This section provides the results of the four experiments used in this study. They will be presented as follows: first, the analysis of target responses (see footnote 29) in the comprehension experiment will be reported. This will be followed by the results of the four production tasks. For each experiment the analysis of target responses will be presented first, followed by the analysis of the occurrence of dummy auxiliaries. Although the effects of lexical aspect and morphological characteristics of the verbs on the use of dummy auxiliaries was analysed, the results of those analyses will not be presented, because there were no significant outcomes.

3.3.1. Comprehension experiment

Target responses

Reliability tests were carried out to measure the internal consistency of the 60 items that this experiment comprises. In the *gaan* +INF condition, with the prospective meaning as target[29], the reliability of the items is high (Cronbach's α=.906), and there were no deviant items. In the present tense condition, with the imperfective meaning as target, the number of correct scores is high. Six of the items always elicited the target responses. Twelve items elicited non-target reactions. The reliability for those items was α=.674. In the *zijn*+INF condition with the imperfective meaning as target as well, there were also six items that always elicited the target responses, and twelve items that sometimes elicited non-target responses. The reliability of those items was not high (α=.556). Both the lower reliabilities of the present tense and the *zijn*+INF condition are brought about by the high scores of the informants. Figure 1 shows that the outcomes have a ceiling effect. Most informants have scores between 90% and 100% of target responses.

An ANOVA was carried out on the data to test whether there was an effect of proficiency level and first language on the responses obtained in each of the three conditions (*gaan*+INF, present tense and *zijn*+INF). An α level of .05 was adopted.

[29] In this task the choice of a picture was considered target when picture 1 corresponded to the stimulus sentences with the construction *gaan*+INF, picture 2 matched the sentences with the finite verb in the present tense. For the purpose of simplifying the task and facilitating the analysis, the incorrect sentences with the dummy construction *zijn*+INF were also ascribed the status 'target' when matched to picture 2. Picture 3 corresponded to the distractors, that is, sentences with the construction *zijn/hebben* + past participle.

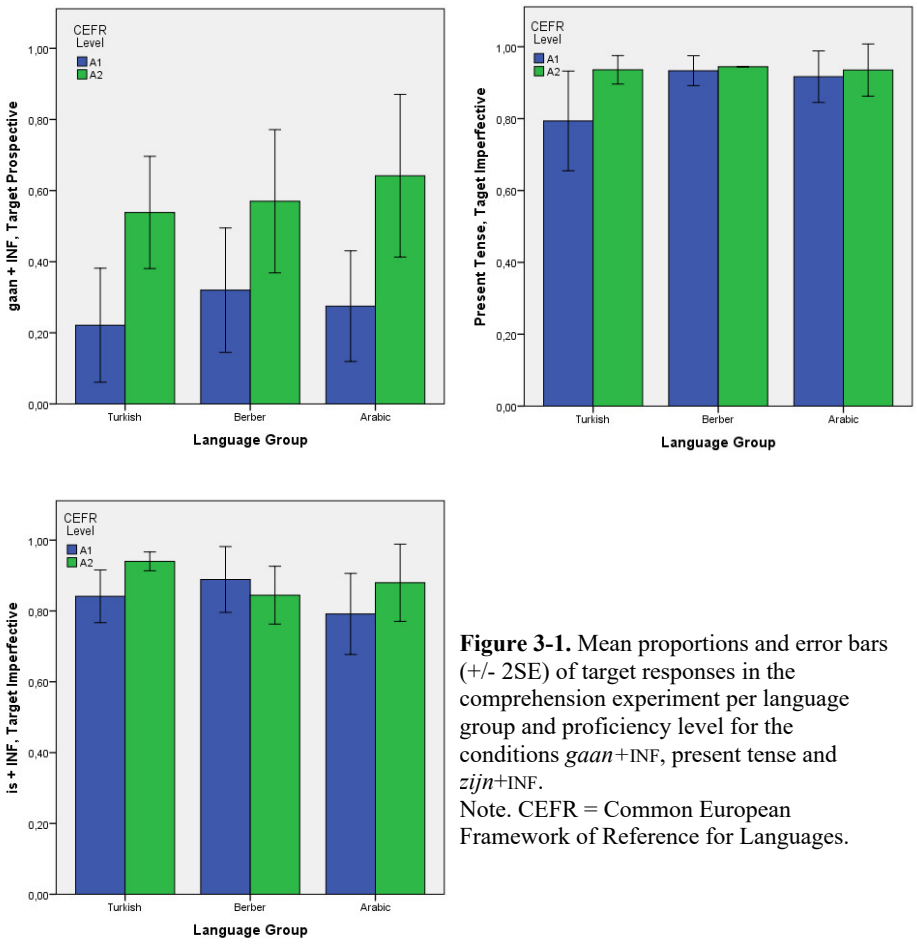

Figure 3-1. Mean proportions and error bars (+/- 2SE) of target responses in the comprehension experiment per language group and proficiency level for the conditions *gaan*+INF, present tense and *zijn*+INF.
Note. CEFR = Common European Framework of Reference for Languages.

In Figure 3-1 it can be seen that all three groups of participants produced more target responses in the present tense and the *zijn*+INF conditions than in the *gaan*+INF condition suggesting that comprehension of the prospective meaning of that construction is difficult for all groups.

The ANOVA shows an effect of proficiency level for the *gaan*+INF condition, $F(1, 34)=13.879$, $p=.001$. Knowledge of the prospective meaning of *gaan*+INF apparently improves as a function of proficiency. However, the proportion of target responses for all groups and levels (the highest mean proportion being only slightly above .50 (=50%)) reveals that none of the groups, not even the A2 participants, show a high degree of understanding of the meaning of that construction. There is for this condition no effect of language group, $F(2, 34)=.406$, $p=.669$. The

interaction effect between 'language group' and 'proficiency level' was not significant, F(2, 34)=.139, *p*=.870.

In the 'present tense' condition the ANOVA yields a non-significant main effect of group, F(2, 34)=2.330, *p*=.116. There is no effect for level either, F(1, 34)=2.969, *p*=.094. No interaction effect was found, F(2, 34)=2.001, *p*=.151.

Similar findings were obtained for the *zijn*+INF condition. There were no significant effects for this condition (group, F(2, 34)=1.126, *p*=.336, level F(1, 34)=2.289, *p*=.139, interaction F(2, 34)=2.106, *p*=.137).

The accuracy of target response for the conditions 'present tense' and '*zijn*+INF' is very high (reaching above 90% in both proficiency levels) for all three participant groups as can be seen in Figure 3-1. This implies that participants consider both constructions as indicative of imperfective aspect. This conclusion is further supported by the observation that none of the participants hesitated in their choice when hearing the *zijn*+INF construction.

3.3.2. Narrative experiment

Target responses

Figure 3-2 gives the mean proportions of target responses[30] and their standard error bars split out for the three experimental conditions, the three learner groups, and the two proficiency levels.

[30] A response was considered target if (1) the target verb was used, (2) the finite form of the lexical verb or the auxiliary verb was congruent with the subject, (3) the following constructions were used: first picture: *gaan* ('go')+INF, *wil* ('want')+INF, and *wil* ('want')+*gaan* ('go')+INF; second picture: finite, *zijn*('be') aan het ('on the')/bezig met ('busy with')+INF, and *zitten* ('sit')/*staan* ('stand') te ('to') + INF; third picture: *zijn* ('be')/*hebben* ('have')+ PPART and zijn ('be') klaar ('ready')/gestopt ('stopped') met ('with')+INF.

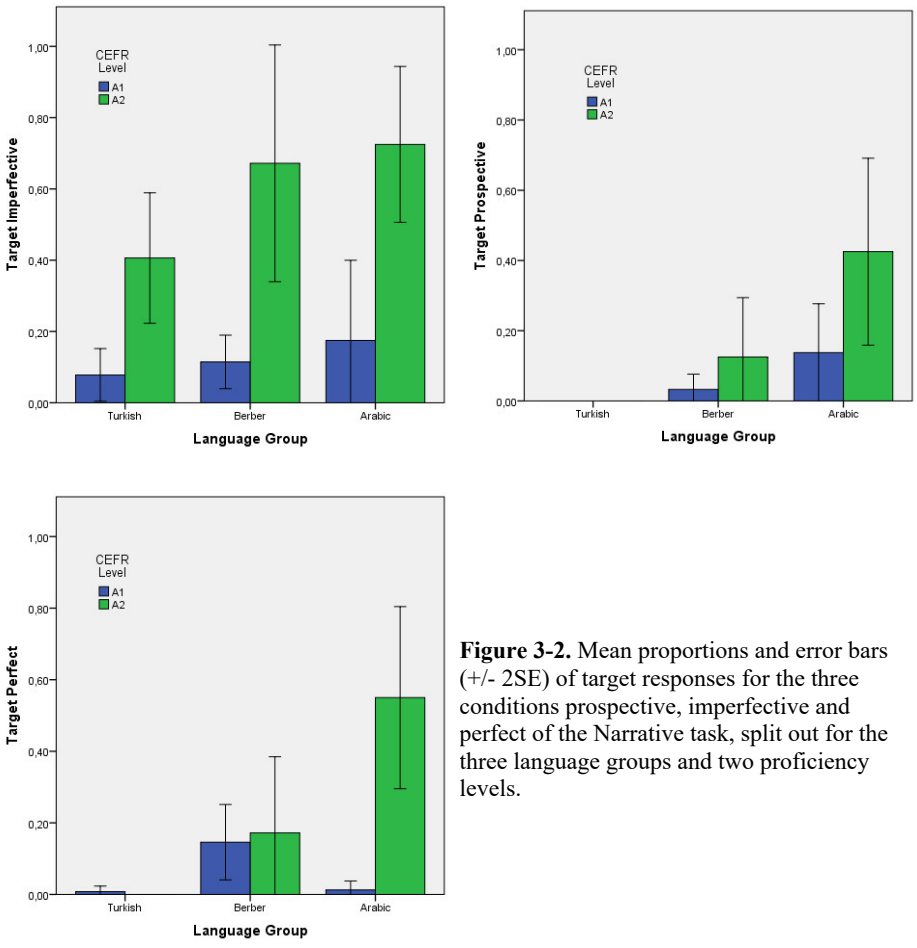

Figure 3-2. Mean proportions and error bars (+/- 2SE) of target responses for the three conditions prospective, imperfective and perfect of the Narrative task, split out for the three language groups and two proficiency levels.

A reliability analysis gives high Cronbach's alphas for the items in all three conditions; α =.900 for the prospective condition, α=.934 for the imperfective condition and α=.926 for the perfect condition. These high values reveal that the tests are internally consistent with respect to target responses and that we may use the sum of target responses as an indicator for the test performance of the participants.

As Figure 3-2 shows, the proportion of target responses in the prospective condition is fairly low, the A2 Arabic learners having the highest mean, which is just above 40%. An ANOVA shows a significant difference between the three language groups in their responses in the prospective condition , $F(2, 34)=16.092$, $p < .000$,

η_p^2=.486. There was also a significant differencebetween proficiency levels, F(1, 34)=8.670, *p*=.006. η_p^2= .203. In addition, there is an interaction effect between language group and proficiency level, F(2, 34)=4.188, *p*=.024, η_p^2=.198, the group of Turkish speakers showing extremely low scores (less than 5%) at both proficiency levels. The two other groups perform better (the group of Arabic learners performing the best) and the A2 participants have better results than the A1 participants.

The ANOVA for the imperfective condition yields a non significant main effect of group, F(2, 34)=2.741, *p*=.079, η_p^2=.495, but there is a significant effect of proficiency level, F(1, 34)=33.385, $p < .000$, η_p^2=.139. There is no interaction effect, F(2, 34)=1.024, p=.370. The Turkish speaking group produces the smallest percentage of target responses of all three groups. The A1 participants produce 10% target responses and the A2 participants 40%. The other two language groups do not differ much from each other in this condition, the A1 participants producing between 15% and 20% of target responses, and the A2 participants of both language groups, their target responses reaching approximately 75%. The error bars indicate large differences between the individual learners.

In the perfect condition there are significant main effects of both language groups, F(2, 34)=16.464, $p < .000$, η_p^2=.492, and proficiency level, F(1, 34)=18.658, *p*=.000, η_p^2=.354. An interaction effect was found between language group and proficiency level in this condition, F(2, 34)=16.442, $p < .000$, η_p^2=.492. The Arabic speaking group shows a noteworthy improvement. The A1 participants produce less than 5% of target responses while the A2 participants produce almost 60%. The Berber speaking group, on the other hand, shows a small increase in the correctness of responses between the two levels. The Turkish group produces less than 5% correct responses at both levels.

The use of dummy auxiliaries

Although in standard Dutch the constructions *gaan*+INF and *hebben* or *zijn* + PPART are correct to express respectively prospective and perfect aspect, we cannot be sure that the participants really wanted to express those aspects when using them. Despite

this note of caution, it is important to realize that the construction *gaan*+INF is used 102 times in the prospective condition, and the construction *hebben/zijn* +PPART occurred 131 times in the perfect condition. This can be taken as an indication that at least some of the participants are aware of the prospective and perfect meaning of these constructions.

In order to estimate the extent of dummy auxiliaries use and formulate hypotheses as to their function in the acquisition of finiteness, the question we will now try to answer is 'How many and which dummy auxiliaries occurred in our data?' We will start by looking at the Narrative task. Table 3-4 presents an overview of the dummy auxiliaries used in that task and their frequencies of occurrence.

Table 3-4. Narrative experiment: dummy auxiliaries and their frequencies of occurrence in the three experimental conditions.

		Zijn (to be)	Gaan (to go)	Doen (to do)	Hebben (to have)
Narrative experiment	Prospective	36	N/A	1	0
	Imperfective	73	45	4	3
	Perfect	42	18	4	10
Total		151	63	9	13

As can be seen in Table 3-4, four different dummy auxiliaries were found in this experiment: *zijn*, *gaan*, *doen* and *hebben*. What is striking in this table is that, in all conditions, the frequencies of dummy *zijn* and dummy *gaan* are much higher than the number of dummy *doen* and dummy *hebben*. The difference between the quantity of dummy *zijn* and the dummy *gaan* is also noticeable, dummy *zijn* being used more frequently. The frequency of both dummy auxiliaries is the highest in the imperfective condition providing evidence that part of participants do not ascribe prospective nor perfect meaning to them.

The dummy auxiliaries *doen* and *hebben* were hardly used by the participants. This concurs with previous findings based on data of monolingual children (Julien et al., chapter 2) in which these two dummy auxiliaries were only marginally used. For this reason, the results presented henceforth concern only the dummy auxiliaries *zijn* and *gaan*, which are extensively used. So, this answers our first research question and confirms the prediction that dummy auxiliaries are used by adult DAL learners.

Two other research questions were whether proficiency level in Dutch and language background affect the use of those dummy auxiliaries. Two repeated

measures ANOVA's were conducted to compare the effect of proficiency level and language background on the frequency of use of the dummy auxiliaries *zijn* and *gaan* in the prospective, imperfective and perfect conditions.

The ANOVA for dummy *zijn* returned a significant effect of condition, F(2, 68)=3.618, p =.032, η_p^2=.096. A Post hoc test, LSD, revealed a significant difference between conditions 1 (prospective; M=.90) and 2 (imperfective; M=1.83), with more dummies in the imperfective. The effect of proficiency level was also significant, F(1, 34)=4.924, p =.037, η_p^2=.127 (less dummies for A2). There was no effect of language group. As for the dummy auxiliary *gaan*, the ANOVA showed only a significant effect of condition, F(1, 34)=6.856, p =.013, η_p^2=.168 (imperfective M=1.13; perfect M=.45). There was no effect of language proficiency or language group.

So, in the Narrative task, the prediction that language proficiency in Dutch influences the use of dummy auxiliaries is confirmed for dummy auxiliary *zijn,* but not for dummy *gaan.* The prediction that language background would influence dummy use was not confirmed for any of the dummy auxiliaries.

In the following section an analysis of the target responses in each completion experiment will be presented, followed by an analysis of dummy auxiliary use in these experiments.

3.3.3. Completion experiments

For various reasons such as absence on the test day, having to leave earlier, and tiredness, five of the participants did not perform one or more of the completion experiments. We therefore miss data of one Turkish speaking participant in the 'completion Syntax', the 'Present tense' and the 'Past tense' experiments, and of four participants (two Turkish, one Arabic and one Tarifiyt speaking) in 'the 'Past tense' experiment.

Target responses

Completion experiment 'Present tense'

An analysis of items reliability was carried out for the completion task 'Present tense', which revealed that the items have a high reliability α=.970, and that there

are no deviant items. This was followed by an ANOVA to test the overall accuracy of the responses in this task.[31] The results are illustrated in Figure 3-3, giving the mean proportions of target responses and their standard error bars split out for the three learner groups, and the two proficiency levels.

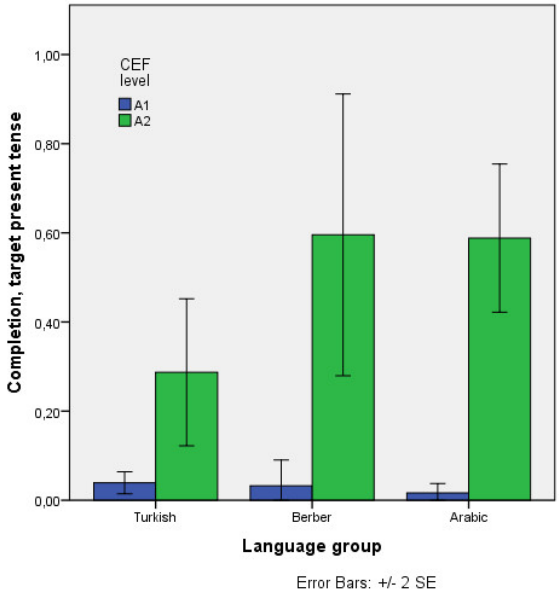

Figure 3-3. Mean proportions and error bars (+/- 2SE) of target responses per language group and proficiency level in the completion experiment 'Present tense'.

In the completion task 'Present tense' there are no significant main effects of language group, F(2.28)=1.930, p =.161. There was an effect of proficiency level, F(1, 28)=36.662, p =.000, η_p^2=.526. A1 participants of all three groups produce less than 10% of correct responses. A2 participants in the Tarifiyt and Arabic speaking groups produce approximately 60% correct responses and the Turkish speaking group lags considerably behind with approximately 30% of correct responses. No interaction effect was found between language group and proficiency level in this condition, F(2, 28)=2.334, p =.113.

[31] In this task the target utterances were those in which the target verb was used, and the finite form of the lexical verb agreed with the subject. The constructions 'is aan het (be.3SG on the) +INF', 'is bezig met (be.3SG busy with) +INF, and 'zit/staat/ligt te (sit/stand/lay.3SG to) +INF' were also considered correct.

Completion experiment 'past tense'

No statistical analysis was performed on the target data of this task, because participants produced only eight target utterances (out of 1019) with this structure, indicating that this grammatical construction is not yet acquired by the majority of the participants.

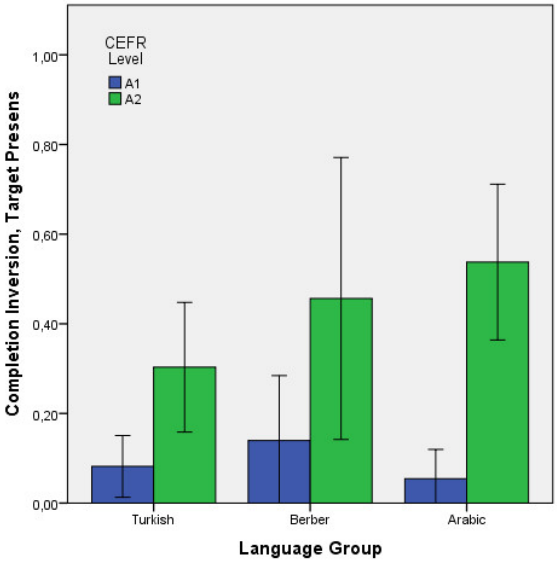

Figure 3-4. Mean proportions and error bars (+/- 2SE) of target responses in the experiment 'completion syntax' per language group and proficiency level for the condition 'canonical order'.

Completion experiment 'syntax'

An analysis of items reliability was carried out for this task. The items have a high reliability α=.927, and there are no deviant items. Figure 3-4 shows the results of an ANOVA for the 'canonical order' (no-inversion) condition. The results give the mean proportions of target responses and their standard error bars split out for the three learner groups, and the two proficiency levels.

In the 'canonical order' (no-inversion) condition there was no significant effect of language group, F(2, 33)=1.275, p =.293, but there was an effect of proficiency level, F(1, 22)=24.596, p=.000, η_p^2=.427. No interaction effect was found between language group and proficiency level, F(2, 33)=1.343, p=.275.

No statistical analysis was carried out for the 'inverted order' condition, because of the 866 utterances produced in this condition, only 41 (4.4%) were correct.[32] Analysis of the individual performances shows that those utterances with correct inversion were produced by nine participants, equally spread through the language groups (three Turkish speakers, three Tarifiyt speakers and two Arabic speakers). All, except one, were A2 participants and only one participant produced a relatively high number (16 out of 23) of correct sentences with inversion. The other eight subjects produced that type of sentences sporadically, indicating that inversion was not easy to realise for both A1 and A2 participants.

The use of dummy auxiliaries

Table 3-5. Completion experiments: total number of dummy auxiliaries

		Zijn (to be)	Gaan (to go)	Doen (to do)	Hebben (to have)
Completion experiments	1. Present tense	147	144	6	15
	2. Past tense	34	14	1	5
	3. Syntax				
	- no-inversion order	71	52	4	3
	- inversion order	61	74	5	4
	Total	313	284	16	27

Table 3-5 presents an overview of the dummy auxiliaries used in the completion tasks. As can be seen, the pattern is the same as that already observed for the narrative task: dummy *zijn* and dummy *gaan* are used much more often than dummies *doen* and *hebben*.

The sum of dummy auxiliaries used in the completion tasks and in the narrative task (see Table 3-4) gives the following results: a total of 464 occurrences of dummy *zijn*, 347 of dummy *gaan*, 25 of dummy *doen* and 40 of dummy *hebben*. Because the last two dummy auxiliaries are only sporadically used, they will be excluded from the analyses presented henceforth, which will focus on the extensively used dummy auxiliaries *zijn* and *gaan*.

It is striking that the number of dummy auxiliaries in the 'Past tense' experiment is considerably lower than in the similar task eliciting the present tense. The

[32] In this task we considered an utterance in which inversion is required correct, if the following criteria were met: (1) inversion was realised, (2) the target verb was used, (3) the subject of the sentence was realised, (4) the verb reflected imperfective aspect, and (5) the finite form of the lexical verb or the auxiliary verb was congruent with the subject.

construction *ging*+INF (go.PAST+INF), which is often used by children (Cornips, 2000; De Jong, 1999; Hollebrandse et al. 2013), was used only three times out of 14 dummy *gaan* constructions. The other eleven occurrences of dummy auxiliary *gaan* were in the present tense. Dummy *zijn* was used a few times in the past tense.

Table 3-5 shows further that the numbers of dummy auxiliaries in both conditions of the 'Syntax' experiment, do not differ much. What is interesting here, is that the 135 utterances (out of a total of 866) produced with a dummy auxiliary had three different surface forms. There were eight utterances with a dummy auxiliary verb in second position, that is, with the structure $XV_{dummy}SV_{lexical}INF$, e.g. *Hier is Pingu lopen* ('Here be.3SG Pingu walk.INF'). So, inversion was produced in those sentences, but with a dummy auxiliary. There were 57 utterances in which a dummy auxiliary was used, but inversion did not take place since the auxiliary verb was placed in the third position. These sentences had a structure of the type $XSV_{dummy}V_{lexical}INF$, e.g. *Hier Pingu is lopen* ('Here Pingu be.3SG walk.INF'). There were also 70 utterances with a dummy auxiliary in which the subject of the sentence was omitted and therefore, it was not possible to determine whether inversion had taken place. It is possible that omission of subject was caused by the difficulty of producing a sentence with an inverted subject, but it is also plausible that this is interference from the L1, since all three languages are pro-drop languages. Leaving out the subject leads to producing utterances like *Hier (Pingu) is lopen* ('Here (Pingu) be.3SG walk.INF'), presumably with the underlying structure $XSV_{dummy}V_{lexical}INF$. This leads us to the conclusion that, at these two language proficiency levels, the syntactic structure underlying the dummy constructions with *zijn* and *gaan,* in both the no-inversion and the inverted orders*,* is the same, that is to say an IP projection, in which the adverbial is adjoined to the IP projection, $_{IP}$[hier [$_{IP}$ is [$_{VP}$ lopen]]].

Two repeated measures ANOVAs were carried out to compare the effect of proficiency level and language background on the use of dummy *zijn* and dummy *gaan* across the four tasks. The analysis regarding dummy auxiliary *zijn*, shows a near significant effect of proficiency level, $F(1, 27)=3.691$, p =.074 (HF corrected), η_p^2=.114 (A1 more dummies). It also shows a task effect $F(3, 81)$ =3.388, p=.032 (Huynh-Feldt corrected), η_p^2=.160 (more dummies in the completion taskc 'Present tense').

Regarding dummy auxiliary *gaan,* the results show only a main effect of task, F(3, 81)=.855, p =.010 (Huynh-Feldt corrected), η_p^2=.178 (more dummies in the completion task 'Present tense'). Although we can conclude from these results that there is a proficiency level effect for dummy auxiliary *zijn*, this effect is not the effect expected. Instead of the predicted increase, the A2 participants show a decrease in use of that dummy. As for dummy auxiliary *gaan* there is no effect of proficiency level. This is a relevant finding for which we will present an explanation in the discussion section. Given that, in almost all tasks, a large amount of individual variation is observed, an analysis of the dummy use by individual learners is presented in the next subsection.

3.3.4. Individual patterns of variation in dummy use

In order to account for individual variation, but still be able to see general patterns, participants were divided into five groups on the basis of their production of dummy auxiliaries:

- extreme dummy users, those who use dummy auxiliaries ten times or more often across all tasks;
- occasional dummy users, who use a dummy auxiliary, up to nine times, spread throughout all tasks;
- selective dummy users, who use dummy auxiliaries to various degrees, but only in one, two or three tasks;
- infrequent dummy users, participants who use a dummy auxiliary only once across all tasks and;
- no dummy users.

Table 3-6 displays the four types of dummy users and the no dummy users distributed over the two levels of language proficiency.

Table 3-6 shows that there were 15 extreme dummy users - five of them use dummy auxiliaries as often as 49 to105 times across the five tasks -, 10 occasional dummy users, nine Selective dummy users, three infrequent dummy users and three no dummy users. Although five participants did not performed all tasks, their performance on the remaining tasks, showed such clear tendencies for a particular type, that is was possible to place them in one of the above categories.

Table 3-6. Use of dummy auxiliaries by five types of dummy users

	Level	Extreme	Occasional	Selective	Infrequent	No dummy
Dummy *zijn*	A1	4	2			
	A2	1	3			
Dummy *gaan*	A1				1	
	A2			2	2	
Mixed	A1	4	1	4		
	A2	6	4	3		
No dummy	A1					2
	A2					1
Total:		15	10	9	3	3
Turkish		9	0	6	2	3
Tarifiyt		4	3	3	0	0
Arabic		2	7	0	1	0

Table 3-6 also shows there are participants who use only dummy *zijn,* there are others who use only dummy *gaan,* and there is also a group that uses both dummy auxiliaries. Participants who use only dummy *zijn* are the *extreme* and the *occasional* dummy users and most of them are A1 participants. Dummy *gaan*, when used as the only dummy auxiliary, is used by selective and infrequent dummy users, most of them being A2 participants. Two of the no dummy users are A1 participants, and one is an A2 participant. It is remarkable that two of those three participants are in the very beginning of their language acquisition process (evidenced by the almost exclusive use of nonfinite verbs) and one of them is in a more advanced stage (evidenced by the high level of accuracy in the use of finite verbs and only a few nonfinite verbs). This suggests that participants who use dummies extensively have already discovered that there must be a finite verb in the frontal part of the sentence.

Table 3-7. Three stages in the language development of Turkish, Berber Tarifiyt and Moroccan Arabic adult DAL learners

Level	Dummy	Nonfinite stage (V_{lex} sentence-final) Dummy aux <10		Dummy stage (V_{lex} sentence-final) Dummy aux >10		Finite stage (V_{lex} sentence-frontal) Dummy aux <10	
A1	No dummy	T11	(110/0/8)				
		T17	(42/0/1)*				
	Predominantly dummy *zijn*	T6	(95/6/9)	T1	(45/56/15)		
		B2	(94/5/12)	T10	(73/30/2)		
		B10	(105/6/5)	T19	(85/23/6)		
		A5	(70/7/15)	B3	(35/28/25)		
		A8	(91/8/7)	B5	(61/29/15)		
				A11	(39/105/1)		
	Predominantly dummy *gaan*			B7	(45/80/5)	A7	(33/1/60)
				B8	(87/14/7)		
				A1	(33/77/7)		
	Both dummy aux. equally often	T21	(116/4/1)				
A2	No dummy					T12	(32/0/51)
	Predominantly dummy *zijn*			T3	(56/36/10)	B1	(35/6/55)
				T7	(96/19/21)	A2	(16/3/48)
				T8	(29/15/59)	A3	(2/4/86)
				T13	(65/12/1)	A9	(3/3/82)
				T18	(16/32/5)		
	Predominantly dummy *gaan*			T9	(31/16/22)	T2	(11/1/79)
				T14	(56/19/22)	T15	(13/1/53)
				B4	(23/60/25)	T16	(31/5/51)
						T20	(4/4/80)
						B6	(18/7/66)
						B9	(2/8/90)
						A4	(26/4/50)
						A6	(10/5/63)
	Both dummy aux. equally often			T5	(51/49/16)		
Total		8		18		14	

Note: The figures given in parentheses are: the number of nonfinite verbs, followed by the number of dummy auxiliaries, followed by the number of finite verbs across all experiments. * Data of this participant is missing for three of the five tasks; Because he produced almost exclusively nonfinite verbs in the Narrative task, we assume that, had he performed all the tasks, he would have produced nonfinite verbs much more often than 40 times. For this reason, this subject was placed in the 'nonfinite stage'.

The dummy auxiliaries fulfill that function. Participants who do not use dummy auxiliaries can be divided into two groups: those who are not yet trying to figure out how the Dutch verbal system works, and those who have already discovered how it

works. Table 3-7 clarifies these distinctions in stages of development. The 40 participants are classified according to their use of nonfinite verbs, dummy auxiliaries and finite verbs in the 130 items comprised in all three production tasks. In the nonfinite stage, fewer than 10 dummy auxiliaries are used, nonfinite lexical verbs are used more than 40 times, and finite lexical finite verbs are produced fewer than 15 times. In the dummy auxiliary stage dummy auxiliaries are used more than 10 times across all experiments.

At this stage, the number of nonfinite and finite verbs varies considerably, but the tendency is that nonfinite verbs are produced more often than finite verbs. In the finite stage the dummy auxiliaries decrease - they are used less than 10 times across all experiments – and simultaneously the number of finite verbs in initial position is higher.

Table 3-7 shows that the nonfinite stage consists solely of A1 participants (8), and the finite stage consists mainly of A2 participants (13), with the exception of one Arabic speaking participant. The dummy stage, on the other hand, is composed of both A1 (9) and A2 participants (9). A considerable number of participants passed the nonfinite stage and was in the dummy stage. Several A2 participants have mastered that stage, even though they still, sporadically, used dummy auxiliaries.

3.4. Discussion and conclusion

The aim of this study was to address the question as to whether dummy auxiliaries are used by adult DAL learners as a structural syntactic step towards the acquisition of finiteness. Four specific research questions were posed which will be discussed below.

Even though dummy auxiliaries have been attested in different earlier types of language acquisition (see introduction), it was necessary to find out whether the data collected for the present study corroborated this finding. We review each of the research questions:

1. Do low-proficient adult DAL learners use dummy auxiliaries?

The results reveal that all three groups of participants used dummy auxiliaries abundantly, in particular *zijn* and *gaan* (see Tables 3-5 and 3-6).

2. Does level of language proficiency in Dutch influence the choice and frequency of dummy auxiliaries?

It was predicted that the number of dummy auxiliaries produced by A2 participants would be higher than that produced by A1 participants. This prediction is not confirmed. There is indeed a level effect, for dummy auxiliary *zijn.* However, instead of an increase, the A2 participants show a decrease of dummy *zijn* across all tasks. As for dummy auxiliary *gaan,* no level effect was found. It seems that the majority of participants in the present study is at a more advanced stage than predicted on the basis of their CEFR level and the results of earlier studies. The starting point in other studies (most of them being longitudinal), such as that of Van de Craats (2009), was the very beginning of being exposed to target language instruction. Van de Craats reported that her participants started using dummy auxiliaries after nine months of instruction. In the present study, at the moment of testing, the majority of the participants (31) had been attending Dutch lessons for a longer period of time than those in Van de Craats' study. It is, therefore, conceivable that they had already gone through the first phases reported in Van de Craats' study.

There are strong indications that the developmental path these learners follow is the same as that reported in the studies mentioned above. Moreover, the present study introduces a new finding. It seems that there are two phases within the dummy stage: an initial phase in which both dummy *zijn* and *gaan* are used, and a subsequent phase in which the occurrence of dummy *zijn* diminishes while dummy *gaan* keeps being used. The conclusion is that level of language proficiency in Dutch influences the use and choice of dummy auxiliaries.

Utterances like *Pingu is gaat schoppen* ('Pingu be.3SG go.3SG kick.INF), *Zeehond is ...gaat eet* ('Seal be.3SG … go.3SG eat.stem) produced by a Turkish A2 participant (other participants show the same patterns), provide evidence that at the *gaan*-phase, participants seem to have realized that *zijn* is no longer allowed in that construction.

3. Does language background determine the choice of dummy auxiliary?

Although the results of the target responses show significant differences among the three language groups in the prospective and perfect conditions of the Narrative

task, the prediction that language background influences the choice of dummy auxiliary was not confirmed.

All three groups behave similarly, and they all use the same dummy auxiliaries. This indicates that the choice of dummy auxiliaries is influenced by target language input rather than by language background. On the other hand, the prediction that Arabic speaking learners would perform better than the other two groups on the prospective condition of the narrative experiment was confirmed. It seems that positive transfer helps the Arabic speaking group to acquire more easily the prospective use of *gaan*+INF.

4. Do adult DAL learners in the initial stages of language acquisition assign meaning to the constructions zijn+INF and gaan+INF?

The results from the comprehension experiment show that all participants match, in most items of the task, the picture portraying the ongoing action to the construction *zijn*+INF and often also to the construction *gaan*+INF. This observation has also been made respectively by Verhagen (2013) and Zuckerman (2001). However, while those two researchers interpret this as evidence that learners ascribe imperfective reading to those constructions, we see these choices as evidence that, in the initial stages of language acquisition, a default meaning is given to those two constructions. This interpretation is corroborated by the fact that the participants in this study produce both *gaan*+INF and *zijn*+INF arbitrarily to describe all three conditions (see Table 3-4), and often add lexical means to express aspect. Aspect is not yet expressed by grammatical, but rather by lexical means. That explains why *gaan*+INF may surface in constructions expressing accomplished actions such as *Penguin gaat hier klaar met maken* ('Penguin go.3SG here ready with make.INF').

Additional evidence that no meaning is attached to dummy auxiliaries is provided by the lack of any significant effect of lexical aspect of the verbs tested in the experiments. Dummy auxiliaries are used indiscriminately with all verb classes, regardless of their semantic constraints. The learners in the present study do not comply with the constraints that statives in Dutch do not allow the continuous constructions *zijn*+aan het+INF and *zitten/staan/liggen*+te+INF, and that transitives and most intransitives require the use of auxiliary hebben ('have') in Dutch. If *zijn*+INF carried imperfective meaning, and was, as suggested in the literature (see Blom, 2003: 70), the precursor of the prepositional infinitival construction *zijn*+aan het+INF, it would not occur, or would occur less, with stative verbs in the

imperfective condition. Similarly, if perfect meaning was attached to it, it would not appear with transitives and intransitives in the perfect condition.

Our conclusion is that dummy auxiliaries are semantically vacuous. They have a purely structural function, in line with Chomsky's (1995) Economy Principle. They come from the Dutch input learners get, in which the copula *zijn* and the construction *gaan* +INF occur frequently. Learners use them as devices to mark the position of the finite verb prior to the movement of the lexical verb. This happens independently from the L1 background of the adult learners. The dummy auxiliaries *zijn* and *gaan* carry finiteness features such as person and number, and occur in the same slot that the finite verb will eventually occupy. They may, therefore, be considered predecessors of movement of the lexical verb. They trigger the marking of the syntactic relation between V and I.

4. The dummy auxiliary stage in first and early second language acquisition of Dutch

Draft article: Julien, Manuela, Van Hout, Roeland and Van de Craats, Ineke. The dummy auxiliary stage in first and early second language acquisition of Dutch. To be submitted

Abstract

This article presents the results of an experimental study on language production and language comprehension, that shows that monolingual (3;6 to 5;7 year olds) and early bilingual (Turkish-Dutch, Tarifiyt-Dutch and Moroccan Arabic-Dutch) speaking children (4;0 to 7;9 year olds) growing up in the Netherlands exhibit the same patterns of acquisition of finiteness in Dutch, including the use of the dummy auxiliary gaan *('go'), to refer to present and past events. In adult, native Dutch, the auxiliary* gaan *refers to future events. A language comprehension task revealed that most children, including the older ones, assign no prospective or perfect meaning to the auxiliaries* gaan *and z*ijn *('be'). The experimental results also show that the use of dummy auxiliaries increases with increased morphological and syntactic complexity. In two experimental tasks, dummy auxiliaries tended to occur more frequently with action verbs than with stative verbs, suggesting the influence of verb class on the acquisition of finiteness. The L1 language background of the bilingual children had no bearing on the results, whereas the length of exposure to Dutch was found to have a clear effect. In two of the three production tasks, children who had 1;6 to 3;3 years of exposure to L2 Dutch produced, significantly fewer accurate responses and more dummy auxiliaries than those who had had more exposure. Bilingual and monolingual children with the same length of exposure to Dutch do not differ significantly from each other in their accuracy scores nor in their use of dummy auxiliaries. Hence it is not the distinction between first and early second language acquisition, but the length of exposure to Dutch that seems to be the relevant explanatory factor for the stage of acquisition of verbal inflection and the use and choice of dummy auxiliaries.*

4.1. Introduction

4.1.1. General introduction

Temporal information is encoded in diverse ways in human languages. Despite limited grammatical knowledge in the early stages of language acquisition, L1 and L2 learners quickly learn to express temporality, first by using discourse strategies and lexical means, and only later on through inflection (Lee, 2001; Jordens, 2012; Starren, 2001).

Dutch researchers (e.g., Blom & De Korte, 2011; De Jong, 1999; Hollebrandse, Van Koert & Van Hout, 2013; Hulk and Cornips, 2005; Jolink, 2005; Jordens and Dimroth, 2006; Julien, Van de Craats and Van Hout, chapter 2; Lalleman, 1986; Orgassa, 2009; Starren, 2001; Van de Craats, 2009; Van de Craats and Van Hout, 2010; Van Kampen, 1997; Verhagen, 2009; Zuckerman, 2001) have observed that the transitional phase in language acquisition - between the initial stage in which the verb is used in its non-finite form (in Dutch commonly at the end of the sentence), and the stage in which it appears in its inflected form in the initial part of the sentence (in first or second position) - is characterized by the emergence of modals, and also by the emergence of the auxiliary-like verbs *zijn* ('be'), *gaan* ('go'), and *doen* ('do'). Because these auxiliaries seem to be (largely) exempt of meaning, they are called 'dummy auxiliaries'[33]. An example is given in (1):

(1)	*Het meisje*	*is / gaat / doet*	*drink-en*
	The girl	be / go / do.PRES.3SG	drink-INF
	'The girl drinks / is drinking.'		
	Target: Het meisje drinkt		

The utterance in (1) refers to the ongoing action of drinking. *Gaat* does not express prospective aspect[34], as it does in the Dutch of adult native speakers, and the auxiliaries *zijn* and *doen* are not used in this way in standard Dutch (Barbiers, 2013).

The use of dummy auxiliaries has been identified in many varieties of L1 and L2 learners (both children and adults) of other languages such as German (Haberzettl,

[33] According to Barbiers (2013: 395) 'Dummy auxiliaries are defined as semantically empty words that in certain stages of L1or L2 acquisition occur in syntactic positions where the main verb occurs in the native adult language. *Doen* ('do'), *hebben* ('have'), *zijn* ('be') and *gaan* ('go') occur as dummies in Dutch L1 and L2.' These words are most often followed by an infinitive of a lexical verb. Dummy auxiliaries are also used in Dutch dialects. For example, the dummy *doen* is particularly used in the southern part of the Netherlands and the dummy *gaan* in the northern part.

[34] See section 1.7.2 for an explanation of the expression of finiteness in Dutch.

2003), French and German (Schimke, 2013), and English (Davis, 1987; Fleta, 2003; Huebner, 1989; Huebner, Carroll and Perdue, 1992; Radford, 1990; Roeper, 1992; Zobl, 2002). This suggests that the phenomenon of dummy auxiliaries in learner varieties may be a more general, rather than language-specific, step in language acquisition.

The accounts offered to explain the dummy auxiliary phenomenon vary, but fall basically within two currents of thought: structural and functional views of language acquisition. Researchers working within a structural framework see the use of (dummy) auxiliaries as a syntactic step towards the acquisition of finiteness, whereas those adhering to a functional framework assume that (dummy) auxiliaries are, just as modals, carriers of morphological properties of finiteness, having at the same time the illocutionary function of assertion. They claim that learners acquire finiteness only after having understood the semantic difference between a particular dummy Aux+INF pattern and its corresponding V-finite alternative (Jordens, 1990; Verhagen, 2009).

Some researchers working within a structural approach, such as Blom and De Korte (2011), see the insertion of a dummy auxiliary in the position of a functional head as a strategy to reduce inflectional and derivational complexity. Due to their high frequency, dummy auxiliaries are believed to be stored as whole units in the mental lexicon and, therefore, can be easily retrieved from the lexicon in their inflected form, to be inserted in the position of a functional head. The production of lexical verbs in the very same syntactic slot, on the other hand, requires movement plus inflection, which is considered an operation difficult to acquire (see the description of this operation in 1.7.2 en 3.1.2).

Supportive evidence that the use of dummies is related to verb movement comes from Van Kampen (1997) and Zuckerman (2001; 2013), who observed that monolingual Dutch children use dummies in main sentences - which require verb movement - whereas dummies in subordinate sentences – where verb movement is not required - are very rare. Zuckerman (2001) proposed an account which he termed 'optional movement', and suggested that young children mistakenly consider the *gaan*+INF and *doen*+INF constructions as identical to the standard finite form, and thus as a grammatical option for describing an ongoing event. Dummy auxiliary constructions allow them to keep the non-finite lexical verb in the final position, as a more economical construction. According to Zuckerman the use of dummy auxiliaries occurs between the ages of about two to four years. Older children rarely produce them. This is, however, contradicted by the study of Hollebrandse, Van

Koert and Van Hout (2013) who found that five-year-olds still use dummy auxiliary *gaan* fairly often. Since older children have acquired almost all aspects of the verbal morphosyntax (Van Kampen and Wijnen, 2000; Van Kampen, 2010), there must be an additional explanation for the extended use of dummy *gaan.* Hollebrandse et al. (2013) proposed that children keep using dummy auxiliaries because they offer not only morphosyntactic, but also morphosemantic advantages. Children are, at this stage, in the process of acquiring form-meaning relations and have to determine the temporal meanings of the whole array of Dutch tense forms. To cope with it, they resort to easily retrievable, semantically empty verb forms. Hence, dummy verbs not only have a syntactic function (to spell out tense features in T), but also a semantic one: they perform existential closure over the event[35]. In addition, once children learn to differentiate *ging* ('went')/*deed* ('did') and *gaat* ('goes')/*doet* ('does'), dummy auxiliaries also carry temporal semantics.

Various explanations have also been offered for the occurrence of dummy auxiliaries in the acquisition of other languages. Haberzettl (2003) proposes that the *is* pattern observed in the language variety of Turkish children acquiring L2 German, must be seen as the element that is frequently used to link 'chunks' to each other. Roeper (1992) claims that children use dummy *be,* during a very short time in their language acquisition, prior to the acquisition of finiteness, to identify the functional category Complementizer. Fleta (2003) came to the conclusion that children (L1 speakers of English) insert BE-forms in interrogative sentences like *Is I can do that? Is you should eat an apple? Are this is broke* (examples taken from Crain and Nakayama, 1987) prior to acquiring subject-Aux inversion. According to these two authors, the dummy auxiliary *be* functions as a precursor of syntactic organization.

In sum, all these studies show that the use of dummy auxiliaries is not an isolated phenomenon, and that it must be seen as part of the process of acquisition of verb inflection and verb placement.The primary concern of the present study is to contribute to our understanding of what the source and role of dummy auxiliaries are

[35] The semantic operation of existential closure links the semantic description of events, such as 'dancing', to actual instances of such events in the 'world' (i.e. there is/was an event such that it is a dancing; Hollebrandse et al., 2013:91). This concept of 'existential closure' approximates Klein's (1994) concept of 'assertion'. According to Klein, finiteness has various components, one of them being assertion, which can be seen as the 'claim' made by the utterance in question. This component (on some abstract level of representation) is structurally linked to the finite component of the verb.

in the acquisition of finiteness (both verb inflection and verb placement) in Dutch by L1 and early L2 children.[36]

The outline of the chapter is as follows. We start with (1) a description of the relevant markers of temporality in the four languages involved in this study, followed by the research questions. The next section (2) presents the experimental framework and the methods for the data collection and analysis. This is followed by the presentation of the results (3). The final sections discuss the main findings (4) and present concluding remarks (5).

Markers of temporality in the four languages in this study

Relevant markers of temporality in the languages involved are presented in Table 4-1 (the same table can be found in chapter 1, Table 1-2).

Table 4-1. Markers of temporality in Dutch, Tarifiyt, Moroccan-Arabic and Turkish

Basic order	Prospective	Imperfective	Perfect	Perfective
Dutch (SOV)	*gaan*+INF	• *zijn*+*aan het*+INF • present tense • posture verbs+INF	*zijn/hebben*+ PPART	• simple past • *zijn/hebben*+ PPART
Tarifiyt (VSO)	• *ad*+AOR • *traḥ*+*ad/ġa*+ AOR • *qa*+*traḥ*+*ad/ ġa*+AOR	*qa*+IMPRF	*qa*+PRF	PRF
Moroccan Arabic (SVO)	ġādi+IMPRF	*ka (ta)*+IMPRF	active PART	PRF
Turkish (SOV)	stem+ -*(y)acak/ecek*	stem + -*yor*	stem + -*DI*	stem + -*DI*

As discussed in 1.7.1, the four languages differ considerably in the ways they express temporality. Turkish uses mainly synthetic forms, whereas the other three

[36] There is no clear consensus as to when a child can be considered an 'early second language learner'. We consider early L2 learners to be children whose first systematic exposure to Dutch as a second language started around the age of 2.6 years, an age at which most children in the Netherlands start attending preschool. Researchers such as Tracy and Thoma (2009) define early L2 learners as children at the ages of three to five, considering this to be the point in time when their L1 grammar is already well in place. Gathercole, Thomas, Roberts, Hughes and Hughes (2013) define early L2 learners as children who start acquiring the second language during the preschool years, by 5 years of age or at least during the early school years.

languages often make use of analytic forms. While Turkish and Moroccan Arabic have one form for each aspect, Tarifiyt and Dutch offer more diversity in the way prospective (Tarifiyt) and imperfective and perfective (Dutch) can be expressed. A more detailed explanation of expression of temporality in the languages in question can be found in 1.7.1.

Since this study concerns the acquisition of finiteness in Dutch, a description of this language is given below. A more detailed description can be found in 1.7.2.

Finiteness in Dutch

In Dutch finiteness is morphologically expressed through tense and agreement inflection on the verb, and syntactically through placement of the finite inflected verb in the second position in the sentence, irrespective of which constituent occupies the first position. According to standard generative analysis, the V2 order is derived from an underlying structure in which the verb is in head-final position (SOV) within the Verb Phrase (VP). Through head-to-head movement, the finite verb moves up from the right-peripheral lexical head position (V) to the left functional positions and, depending on the specific analysis,ends up in the complementizer (COMP or C) position (see Den Besten, 1989; Koster, 1975), or in I (AGR/T) (see Zwart, 1997). If a constituent other than the subject is moved to the Spec,C position, the result of this movement is that the finite verb and the subject switch places. This is called subject-verb inversion (see Stage 4 in example 2). An example of the stages learners go through, with dummy auxiliary (Stage 2) and without auxiliary insertion (skipping Stage 2), is provided in (2), which is the same as in chapter 3 (1).

Dutch has a two-way system - past and non-past – to grammaticalise tense. The present tense regular paradigm has three different finite verb forms: stem+-*0* (bare verb, stem+-*t* and stem+-*en*.) The bare verb appears with first person singular subjects and second person singular pronominal subjects when the subject is post-verbal (e.g., in questions). With the third person singular and second person singular when the subject precedes the verb, the verb stem is followed by the –t suffix. With plural subjects the –*en* suffix is added to the verb stem. Dutch infinitival verbs are morphologically similar to finite plural forms. However, finite verbs and infinitives are placed in different positions. See also 2.2 and Table 2-1.

(1) Stage 1 * *Jan* [$_{VP}$ *naar de kerk* *lopen*]
Jan to the church walk.INF
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 2 [$_{CP}$ *Jan* [$_{C}$ *gaat* [$_{VP}$ *naar de kerk* *lopen*]]]
Jan go.3SG to the church walk.INF
'Jan is going to walk to the church.'
Target: Jan loopt naar de kerk.
Intended meaning: Jan walks to the church.

Stage 3a [$_{CP}$ *Jan* [$_{C}$ *loopt*$_i$ [$_{IP}$ [$_{VP}$ *naar de kerk* t$_i$]t$_i$]]]
Jan walk.3SG to the church
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 3b [$_{IP}$ *Jan* [$_{I}$ *loopt*$_i$ [$_{VP}$ *naar de kerk* t$_i$]]]
Jan walk.3SG to the church
'Jan walks to the church.'
Target: Jan loopt naar de kerk.

Stage 4 [$_{CP}$ *Hier* [$_{C}$ *loopt*$_i$ [$_{IP}$ *Jan* t$_i$ [$_{VP}$ *naar de kerk* t$_i$]]]]
Here walk.3SG Jan to the church
'Here Jan walks to the church.'
Target: Hier loopt Jan naar de kerk.

Note: stage 3a is according to ten Besten/Koster (1975); stage 3b is according to Zwart (1997)

Aspect is often expressed through auxiliaries and constructions with a posture verb or with the prepositional phrase *aan het V ('on the V')*, where V stands for a lexical verb in infinitival form. Auxiliary verbs often have irregular present tense forms such as stem alternations and/or the absence of –t in second and third person singular contexts. Auxiliaries occupy the second position and the lexical verb, in the infinitive, a sentence-final position.

Studies on the acquisition of tense and aspect morphology have shown that particular grammatical morphemes expressing tense and/or aspect never occur in certain verb classes. Brown (1973) and Bloom et al. (1980) found that the progressive aspect marker *–ing* never overgeneralizes to stative verbs and that children use past tense morphology only with a small group of punctual and completive verbs such as *fell*, *broke*, *dropped* and *found.* A similar interaction between tense-aspect marking and inherent temporal features (i.e. lexical aspect) has

been found in other languages such as French (Bronckart and Sinclair, 1973), Italian (Antinucci and Miller, 1976) and Turkish (Aksu-Koç, 1988). In an earlier study, Julien et al. (chapter 2) found that stative verbs indicating mental states such as *kennen* ('know') or *zien* ('see') rarely occur with dummy auxiliaries and are used as finite verbs in initial position as early as 2;03 years of age. This finding corroborates those of Jordens (1990), Schlichting (1996), and Wijnen (1995) who conclude that early finite verbs (in V1 of V2 position) are statives rather than eventives. Julien et al. (chapter 2) also observed that stative verbs expressing an external state, such as the verbs *zitten* ('sit'), *staan* ('stand'), *liggen* ('lie') occur with dummy auxiliaries, but that dummy auxiliaries were most frequent with action verbs. Studies on L2 acquisition report similar associations between lexical aspect and tense-aspect morphology (Andersen, 1991; Bardovi-Harlig and Reynolds, 1995). Based on these findings, we postulate that the semantics of verb classes may play a role in the occurrence of dummy auxiliaries in L1 and early L2 acquisition.

Finally, particle verbs (particle + verb) may uncover the process of verb movement in realizing finiteness. When moving upwards, the lexical verb is separated from the particle, which remains in sentence-final position (see Dehé, 2012 for a discussion of morphosyntactic properties of particle verbs in Germanic languages). It is plausible that this separation of the verb from the particle may put extra strain on learners' processing capacities, leading to less accuracy with these verbs and to the use of strategies such as the use of dummy auxiliaries to avoid those difficulties.

Research questions

In order to address the general query on the role of dummy auxiliaries in language acquisition we have formulated the following specific research questions:

1. Do both L1 and L2 children acquiring Dutch use dummy auxiliaries?
   Since dummy auxiliaries have often been identified in the language of learners of Dutch (see 1.1), we predict that they will be found in the production data of the children investigated in the present study.

2. Do child learners of Dutch assign meaning to the construction *zijn* ('be')*/gaan* ('go')+INF?
   The prediction is that the youngest bilingual children in the present study, being in a less advanced stage of acquiring Dutch than monolinguals and older

bilinguals, will ascribe a default, imperfective reading to both auxiliaries In other words, both auxiliaries are underspecified for tense and aspect at this stage. This prediction is based on studies by Zuckerman (2001; 2013), Verhagen (2013) and Julien et al. (chapter 3), who came to the conclusion that monolingual children and adult DAL learners, in early stages of their acquisition of Dutch, ascribe imperfective (Zuckerman, Verhagen) or no meaning (Julien et al.), rather than prospective or perfect meaning to the auxiliaries *gaan* and *zijn*.

3. Does length of exposure to Dutch influence the use and choice of dummy auxiliaries?
   Previous research has shown that monolingual children and adult DAL learners, at the initial stage of language acquisition, use very few dummy auxiliaries, and that those increase as the acquisition process evolves. In the next stage, dummy auxiliaries decrease while finite lexical verbs in V2 position increase (Blom and De Korte, 2011; Julien et al., chapter 2; Verhagen, 2009; Van de Craats and Van Hout, 2010). Based on these findings, we predict that the very young bilingual children will be in the 'dummy auxiliary stage' (see stage 2 in example 2). Hence, the number of dummy auxiliaries produced by them will be high. The monolinguals and the older bilinguals, having had a longer length of exposure (LoE) to Dutch, will be coming out of that stage and will therefore produce fewer dummy auxiliaries.

   Regarding the choice of dummy auxiliaries, Julien et al. (chapter 2) and Julien et al. (chapter 3) have shown that monolingual children acquiring Dutch and adult DAL learners use dummy *zijn* ('be') in the first period of their language acquisition. Their use of dummy *zijn* is short lived. As learners progress in their language development, dummy *zijn* almost completely disappears as they start favouring dummy *gaan* ('go'). Based on this finding, it is predicted that the very young bilingual children in the present study will use more dummy *zijn* than the other two groups of children, and that the latter will use more dummy *gaan*.

4. Does the L1 language background of the bilingual children influence the comprehension and choice of dummy auxiliaries?
   Van de Craats (2009) and Van de Craats and Van Hout (2010) have shown that Turkish adult DAL learners mainly use the dummy auxiliary *zijn,* and Moroccan Arabic learners have a preference for the dummy auxiliary *gaan*. These

researchers have put forward the hypothesis that the dummy *gaan* could be the result of interference from L1 Moroccan Arabic, since that language has an auxiliary which is, regarding form and meaning, very similar to the auxiliary *gaan* in Dutch. The dummy *zijn* is assumed by Julien et al. (chapter 2) and Verhagen (2013) to originate from the Dutch language itself, under the influence of the extensively-used copula *zijn.* These findings lead to the prediction that the choice of dummy auxiliaries will differ among the four language groups of participants in the present study. Hence, Moroccan Arabic and Tarifiyt speakers will choose the dummy auxiliary *gaan,* due to the fact that those two languages have periphrastic constructions that resemble the construction *gaan*+INF, respectively *ġadi/ġa*+IMPRF and *traḥeġ+ad/a/ġa*+AOR. On the other hand, because of the fact that those constructions in Moroccan Arabic and Tarifiyt have, like the Dutch *gaan*+INF, a prospective meaning, it can be expected that the dummy *gaan* will quickly be abandoned in favor of its correct prospective use. This will be reflected in a reduced prevalence of the dummy *gaan* in the data of the older Moroccan Arabic and Tarifiyt speaking children.

5. Does the use of dummy auxiliaries increase as morphosyntactic complexity increases?

   An affirmative answer would provide evidence that L1 and L2 children use dummies to avoid inflectional and/ or derivational complexity. That seems to be the case in children's second language acquisition, as suggested by Blom and De Korte's study (2011), in which they showed that the number of dummy auxiliaries used by the children increased as the number of syntactic steps required to produce the inverted XVS order increased. Given that the participants in the present study are similar to those in Blom and De Korte's in terms of age and LoE to Dutch[37], the prediction is that the younger bilingual children will produce more dummy auxiliaries with sentences requiring inversion than the monolingual and the older bilingual children.

   It is also predicted that dummy use is influenced by morphological complexity. This would corroborate studies such as Paradis, Nicoladis and Crago (2007), who noted that early L2 learners of English and French produced more errors with irregular past tense forms than with regular ones, and that of Rispens and

[37] The children who participated in Blom and De Korte's study (2011) were aged between 4;8 and 8;2, and had received substantial exposure to Dutch at school from the age of four onwards.

De Bree (2014), who found that young Dutch speaking TD children perform worse than older children on past tense irregular verbs than on regular verbs.
In the present study it is hypothesized that the present tense is easier to acquire than the past tense and that not only irregular but also particle verbs will be more difficult to acquire than regular verbs.

6. Does verb class have an effect on the use of dummy auxiliaries?
In an earlier corpus study, Julien et al. (chapter 2) observed that monolingual children aged 1;6 to 3;6, produced internal state verbs in their finite form in the V1/V2 position before verbs from other classes. With other verb classes they used the periphrastic construction X+INF. These findings corroborated those of Jordens (1990). The prediction is than that the children in the present study will use only a few or no dummy auxiliaries with stative verbs and more with other verb classes, in particular with transitives and resultatives, since these verbs require the verb to move over the argument(s) or the adjunct in order to get to V2 position, making inflection with them more difficult than with other verb classes.

4.2. Method

4.2.1. Participants

The participants were 48 children growing up in the Netherlands, 16 acquiring Dutch as a first language and 32 Dutch as a second language. There were 23 boys and 25 girls. The bilingual children spoke Moroccan Arabic, Tarifiyt, or Turkish as their L1. The children were recruited in cities in the metropolitan region of the western part of the Netherlands, and in cities in the eastern part of the Netherlands.

Most participants, ranging in age from 3;6 to 7;9, had attended (two of them still attending) preschool[38] from the age of 2;6 onwards, before entering primary school at the age of four. The LoE to Dutch that the children had experienced at the time of the experiment varied from 3;6 to 5;7 years (monolinguals) and 1;6 to 5;3 years (bilinguals).

[38] Most children in the Netherlands attend preschool, generally two to three times a week for approximately three hours each time. The language of communication is mostly Dutch and special programs, the so called VVE programs, are used with children with a low command of Dutch, aimed at stimulating the acquisition of that language. VVE stands for *Voor- en Vroegschoolse Educatie*, which means 'Pre- and early school education'.

The following criteria were used to select participants: teachers and/or parents had no reason to believe that the child had any (i) lower cognitive abilities or (ii) hearing problems; (iii) the child had not experienced episodes of otitis media with effusion or recurrent hearing problems in the six months prior to taking part in this study; (iv) the child did not have behaviour problems such as autism or extreme forms of ADHD; (v) both parents or carers of the monolingual children were native speakers of standard Dutch; (vi) the parents or carers of the bilingual children were speakers of Turkish, Tarifiyt or Moroccan-Arabic; (vii) the bilingual children's systematic exposure to Dutch had started around or after the age of 2;6 years.

4.2.2. Elicitation tasks

Three production and one comprehension experiments were administered to the participants. They are displayed in Table 4-2.[39]

This set of experiments, all of them aiming at eliciting the third person singular, was designed not only for monolingual and bilingual TD children acquiring Dutch, but also for SLI children (both monolingual and bilingual) and adult DAL learners.

Both the multiple choice Comprehension task, with 56 items, and the Narrative task, with 48 items, were designed to test whether aspectual meaning is involved in the constructions *zijn*+INF and *gaan*+INF. The tasks consisted of watching film clips, each followed by three pictures extracted from the film in question, which were presented on the screen immediately after the film. The first picture shows the image one fraction before the beginning of an action or state, the second picture shows the action or state itself and the third picture shows the end of the action/state.

The completion task Syntax was designed to answer the question whether the number of dummy auxiliaries produced increases as syntactical complexity increases. This experiment comprises a total of 47 items; 23 items to test the no-inversion order, which does not require verb and subject inversion, and 24 items to test the inverted order.

[39] The comprehension experiment consists of 60 items, four of which were used as distractors and put in a fourth condition with the construction *zijn/hebben*+PPART. This condition was not involved in the analyses reported in the next section. One item was removed from the Syntax task in the no-inversion order because it elicited a plural form.

Table 4-2. The experiments in this study

Experiment	Type of task	Mode	N of items
1	Multiple choice (meaning interpretation)	Comprehension	
	(a) prospective		19
	(b) imperfective		18
	(c) dummy		19
2	Narrative (meaning)	Production	
	(a) prospective		16
	(b) imperfective		16
	(c) perfect		16
3	Completion syntax	Production	
	(a) no-inversion order (SV)		23
	(b) invertion order (XVS)		24
4	Completion morphology	Production	
	(a) present tense		34
	(b) past tense		34

The sentence completion Morphology task, with the 'Present and Past tense' conditions, each containing 34 items, was designed to investigate the relationship between morphological skills (inflection) and the use of dummy auxiliaries.

4.2.3. Group comparisons

The results of a number of studies on language acquisition have led to the conclusion that the amount of input constitutes a predictive factor for the rate and patterns of acquisition of various aspects of morphosyntax (Blom, 2010; Gathercole and Thomas, 2005; Unsworth et al., 2015). Other studies (Paradis and Genesee, 1996; Genesee and Nicoladis, 2007) have shown that, with regard to morphosyntactic development, simultaneous bilingual children, despite the fact that they often experience significantly less exposure, follow the same developmental patterns as monolingual children, and generally do so within the same timeframe.

In the present study, while the monolingual children have been exposed to Dutch from birth, the bilingual children have been exposed to that language only after 2;6 years of age. In order to account for this difference in exposure, the following comparisons were made.

Bilingual children aged 72-95 months ('young bilinguals' or Y-bilinguals) were compared to monolingual children aged 42- 67 months ('very young monolinguals' or VY-monolinguals). In this comparison LoE is maintained as a constant. This means that, if significant differences are found, these can be attributed to

bilingualism. When making such a comparison, there are confounding variables, which are not easy to control, such as 'amount and quality of exposure' and 'mental age'. The bilingual group is older than the monolingual group, and therefore cognitively more mature. As Unsworth and Blom (2010) point out, children at different ages have different metalinguistic knowledge and test taking skills. The present study tries to account for the 'cognitive maturity' factor and test taking experience by comparing these two groups of children with a group of younger bilingual children aged 48 through 70 months ('very young bilinguals' or VY-bilinguals), and hence approximately the same age as the monolingual children. A comparison between the VY-bilinguals and the VY-monolinguals will help us explain the role of exposure to language, without the confounding variable 'mental age'. In addition, a comparison of the two bilingual groups will give us a 'window' on the linguistic development of Dutch in bilingual children. The rationale behind these comparisons is the following: if the Y-bilinguals perform better than the VY-monolinguals, then cognitive maturity is plausibly responsible for this difference. If they perform equally well, it means that cognitive maturity does not play a significant role; if the VY-bilinguals perform worse than the other two groups, this suggests that exposure matters, and that comparisons based on age are not adequate to reach conclusions about bilingualism. If, on the other hand, the VY-bilinguals and the VY-monolinguals perform equally well, this may mean that, as regards that particular linguistic aspect, it takes the bilingual children between 1;6 to 3;3 years (i.e., the LoE to Dutch the VY-bilinguals have had) to reach the same stage of development as the monolingual children. This is schematically shown in Figure 4-1.

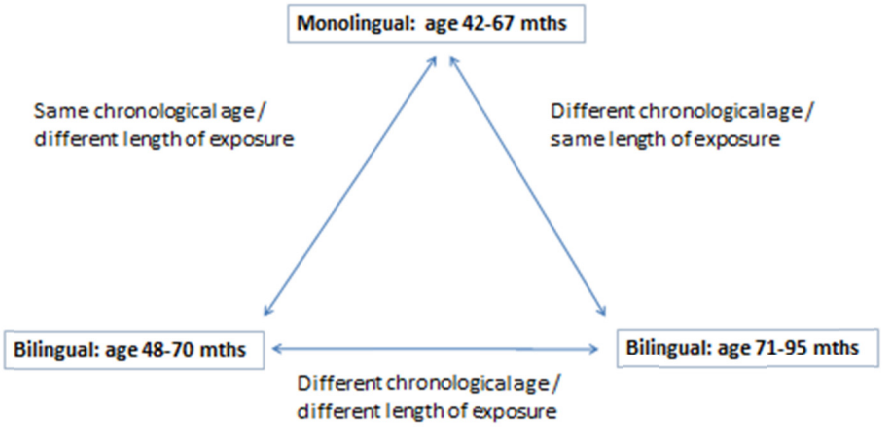

Figure 4-1. The comparisons made between the three groups of learners

Table 4-3 gives an overview of characteristics of the 48 participants divided into language background (L1) and age groups.

Table 4-3. Most relevant learner characteristics of the three age groups; Age in months range (min-max); Mean and SD (standard deviation)

	Monolingual	Bilingual	
	Very young	Very young	Young
Age range (months)	42-67	48-70	71-95
Age mean (SD)	56.25 (6.99)	59.89 (7.20)	82.69 (7.87)
Languages (N)	Dutch (16)	Tarifiyt-Dutch (5)	Tarifiyt-Dutch (3)
		Arabic-Dutch (3)	Arabic-Dutch (1)
		Turkish-Dutch (11)	Turkish-Dutch (9)
Total number	16	19	13

4.2.4. Materials

The verbs used in the experiments were divided into four classes, which are distinguished from one another on the basis of such semantic aspects as their durative nature, argument structure and the possible presence of an adverbial or an object in the sentence signaling an endpoint to the action or state. These verbs were also grouped into verb types according to the following morphological

characteristics: regularity and presence of a verbal particle. The verbs used can be found in Appendix 1.

Short clips and pictures taken from the television series ***Pingu*** were used. The programme DVDx 4.0 was used to extract and edit clips from the DVD *Pingu voor altijd* (Eng: *Pingu Forever*) (The Pygos Group and Hit Entertainment Limited, 2010). Afterwards, clips were made out of the converted DVD using the programme Virtual Dub 1.9.

The series of Pingu films was chosen due to its appeal to different age ranges. The films' simplicity and transparency ensured that the participants could easily understand them. Moreover, the fact that they lack any reference to a specific spoken language eliminated any bias towards one of the languages spoken by the participants.

4.2.5. Procedures

Children were tested individually. The tasks were presented to them on a laptop using the software programme E-prime 2.0 (Schneider, Eschman and Zuccolotto, 2001). Depending on the task, each participant was instructed to match a picture with a stimulus utterance, which they heard via the laptop's loudspeaker, or to describe an event on a film clip and/or an action depicted in a picture, or a picture sequence, presented to them on the laptop. The E-prime programme enabled not only a randomisation of the test items in the experiments, but also the recording of the participant's responses. In the language comprehension task the E-prime's function to record accuracy of response was used.

All the utterances produced by the participants were orthographically transcribed. Transcription conventions used were taken from the transcription system of CHAT (Codes for the Human Analysis of Transcripts) (MacWhinney, 2000). A coding system consisting of ten categories was designed for all four experiments. Each category represented a certain type of construction and its variants. We analyzed the data using the software programmes Microsoft Excel 2007 and IBM SPSS 21.

4.3. Results

In the following three subsections the results will be presented for each experiment in the following order: (i) target and most frequent non-target responses (see footnotes 40, 41, 43 and 44), (ii) occurrence of dummy auxiliaries, (iii) effects of

verb type and of (iv) verb class on accuracy and dummy auxiliary, and (v) individual patterns in the use of dummy auxiliaries.

Two ANOVAs were performed on the outcomes of each experiment. The first ANOVA was to explore how the three research groups of children compared to each other regarding the accuracy of responses and, in the production tasks, their use of dummy auxiliaries. The second ANOVA was aimed at specifically testing L1 effects in the bilingual groups. We focus in this analysis on L1-related effects and do not report effects we already found in the first ANOVA.

Regarding verb type, only the results of the two completion tasks (Morphology and Syntax) will be reported, since the verbs in the Comprehension and Narrative tasks were not systematically classified according to their type. We apply two ANOVAs on the results of the completion tasks: the first one to explore the effect of verb type on target responses, and the second one to assess the effect of verb type on dummy auxiliary use.

Given that the statistical analyses did not provide a clear, interpretable picture regarding the effect of verb classes on accuracy and dummy auxiliary use, the results will be reported in a descriptive way.

An α level of .05 was adopted in the statistical analyses.

4.3.1. Comprehension experiment

Reliability tests were carried out to measure the internal consistency of the items that this experiment comprises. In the *gaan*+INF condition, with the prospective meaning as target[40], the reliability of the items is acceptable (Cronbach's α=.754). There were two deviant items. These items were kept in the analysis since removing them would not increase the reliability. In the present tense condition, with the imperfective meaning as target, the reliability was high, α=.913. In the *zijn*+INF condition, also with the imperfective meaning as target (see footnote 37), the reliability of the items was high (α=.843).

[40] The choice of a picture was considered target when Picture 1 corresponded to the stimulus sentences with the construction *gaan*+INF, Picture 2 matched the sentences with the finite verb in the present tense. For the purpose of simplifying the task and facilitating the analysis, the incorrect sentences with the dummy construction *zijn*+INF were also ascribed the status 'target' when matched to Picture 2. Picture 3 corresponded to the distractors, that is, sentences with the construction *zijn/hebben* + past participle.

Target and non-target responses

Figure 4-2 shows the mean proportions of target responses and error bars (+/- 2SE) in the three conditions, split out for the three groups of children.

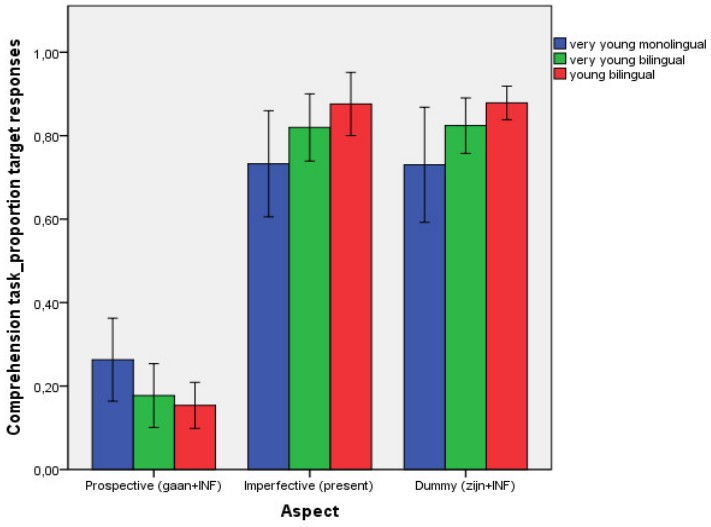

Figure 4-2. Mean proportions of target responses and error bars (+/- 2*SE*) for the three participant groups in the conditions *gaan*+INF (picture 1), present (picture 2) tense and *zijn*+INF (picture 3)

In Figure 4-2 it can be seen that the percentage of target responses in the dummy *zijn*+INF and imperfective conditions ranges between around 75% and 90%. Conversely, in the *gaan*+INF condition, the response accuracy is very low for all groups (VY-monolinguals 26.3%, VY-bilinguals 18.1% and Y-bilinguals 15.4%). They did not choose the first picture when hearing the construction *gaan*+INF. When failing to choose the target (first) picture upon hearing the construction *gaan*+INF, all groups chose mainly the second picture. The VY-monolinguals chose that picture 62.5% of the time, the VY-bilinguals chose it 74.2% and the Y-bilinguals 80.6%.

The first ANOVA shows a significant main effect of aspect on target responses, $F(1.344, 60.495)=194.714$, $p=.000$, $\eta_p^2=.812$. Significant differences (pairwise comparisons, LSD) were found between the conditions *gaan*+INF and present tense ($p=.000$) and *gaan*+INF and *zijn*+INF ($p=.000$). No significant difference was found between the conditions imperfective and *zijn*+INF ($p=.933$). No main effect of group

(the three research groups) was found, $F(2, 45)=.984$, $p=.382$, $\eta_p^2=.042$. There was no interaction effect between group and aspect, $F(2.689, 60.495)= 2.835$, $p=.051$, $\eta_p^2=.112$.

The second ANOVA, in which only the bilingual groups were compared with each other, shows no main effect of L1 on accuracy scores, $F(2, 26)=.092$, $p=.912$, $\eta_p^2=.007$. There was no interaction effect between L1 and group, $F(2, 26)=.369$, p=.695, $\eta_p^2=.028$, nor between L1 and aspect, $F(4, 52)=.808$, $p=.526$, $\eta_p^2=.059$. There was no interaction between aspect, group and L1 $F(4, 52)=.631$, $p=.643$, $\eta_p^2=.046$.

It is noteworthy that, with the exception of two of the older children, the participants showed no hesitation in choosing the picture where the action is portrayed, when hearing each of the three constructions. In fact, they seemed to disregard the grammatical construction they heard, and focused solely on the content of the verb. The following, not uncommon, examples (3) and (4) support this idea: In example (3) Ryan, a five year old monolingual, heard the stimulus utterance which expresses prospective aspect *Pingu gaat dansen* (Pingu go.3SG dance.INF), and he chose the picture where Pingu was dancing while saying:

(3)	*'dansen ...*	*hier!'*
	dance.INF	here

In example (4) Ismael, an eight year old bilingual, heard the utterance **Pingu is een cadeau krijgen* (lit. Pingu be.3SG a present receive.INF), pointed to the picture depicting the action taking place while saying:

(4)	*'Pingu KRIJGT,*	*een cadeau!'*
	lit. Pingu receive.PRES.3SG,	a present!

Ismael showed that he perceived the construction *zijn*+INF as incorrect, by correcting it while putting emphasis on the finite verb *krijgt* ('receive'.3SG). By doing this, while choosing the picture portraying the action, he indicated that he ascribed imperfective meaning to that construction.

To summarise the results of the comprehension task, the low scores in the *gaan*+INF condition indicate that understanding of the prospective meaning of that construction has not yet been acquired. The fact that all groups consistently choose the picture portraying the ongoing action when hearing the present, the *gaan*+INF and the *zijn*+INF constructions, suggests that most children assign no additional meaning to those grammatical constructions and focus solely on the meaning of the verb.

4.3.2. Narrative experiment

A reliability analysis gives good Cronbach's alphas for the 16 items in all three conditions: prospective α =.840, imperfective α=.881, and perfect α=.836. These relatively high values show that the tests are internally consistent with respect to target responses and that we may use the sum of target responses as an indicator for the test performance of the participants. All participants, except one, performed this task.

Target and non-target responses

Figure 4-3 shows the mean proportions of target responses and error bars (+/- 2SE) in the three conditions, split up for the three groups of children[41].

[41] A response was considered target if all the criteria were met: 1.the target verb was used, 2. the finite verb was congruent with the subject, 3. One of these constructions was used: first picture: *gaan* ('go')+INF, *wil* ('want')+INF, *wil* ('want')+*gaan* ('go')+INF and *moeten* (must)+INF; second picture: finite (present and past tenses), *zijn* ('be') *aan het* ('on the')/*bezig met* ('busy with')+INF, and *zitten* ('sit')/*staan* ('stand') te ('to')+INF; third picture: *zijn* ('be')/*hebben* ('have')+ PPART and *zijn* ('be') *klaar* ('ready') /*gestopt* ('stopped') *met* ('with')+INF.

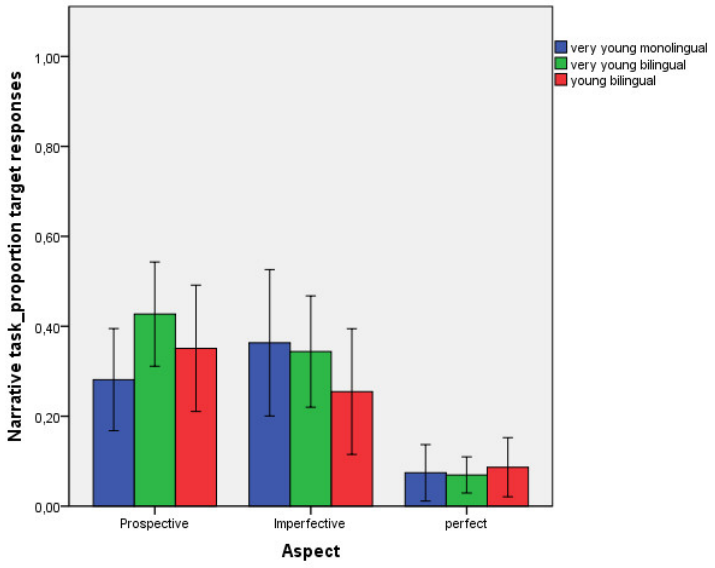

Figure 4-3. Mean proportions of target responses with error bars (+/- 2*SE*) in the conditions prospective, imperfective and perfect of the Narrative task for the three different age groups

In this task, the percentage of target responses is low in all three conditions: below 50% for both prospective and imperfective and below 10% for the perfect aspect. The first ANOVA showed a significant main effect of aspect, $F(1.812, 79.721)= 34.334$, $p=.000$, $\eta_p^2=.438$. Pairwise comparisons (LSD) revealed that both the prospective and the imperfective conditions differed significantly from the perfect condition (p=.000). There was no significant difference between the prospective and the imperfective conditions (p=.785). There was no effect of group, $F(2, 44)=.191$, $p=.827$, $\eta_p^2=.009$. No interaction effect was found between aspect and group, $F(3.624, 79.721)=1.559$, $p=.198$, $\eta_p^2=.066$.

The second ANOVA shows an effect of L1, $F(2, 25)= 3.436$, $p=.048$, $\eta_p^2=.216$. Post-hoc comparisons (HSD) revealed however no significant differences between the groups. No interaction effect was found between L1 and group, F(2, 25)=3.344, p=.052, $\eta_p^2=.211$. No interaction effect was found between aspect and L1, F(4,

50)=.219, p=.926, η_p^2 =.017. There was no interaction between aspect, group and L1 F(4, 50)=.178, p=.949, η_p^2 =.014.

For a complete picture of how these children progress in their acquisition of finiteness, not only the target, but also the three most frequently produced non-target constructions are shown in Table 4-4.

Table 4-4. Narrative task: target and non-target constructions (in percentages based on the total of different constructions) produced in the three conditions for the three groups of children. Non-target constructions include grammatically correct constructions with another lexical verb than the target lexical verb.

Target						
	VY-Monolingual		VY-Bilingual		Y-Bilingual	
Prospective	*gaan*+INF	22.3	*gaan*+INF	39.9	*gaan*+INF	30.3
	modal+INF	5.9	modal+INF	2.4	modal+INF	4.8
Imperfective	present tense	32.4	present tense	33.3	present tense	21.6
	past tense	5.9	past tense	1.4	past tense	6.7
	zijn+aan		*zijn*+aan		*zitten/staan*	
	het+INF	3.5	het+INF	0.7	te+INF	0.5
Perfect	*zijn*+PPART	0.0	*zijn*+ PPART	2.1	*zijn*+PPART	2.4
	hebben+PPART	5.1	*hebben*+PPART	3.5	*hebben*+PPAR	3.8
	zijn+klaar		*zijn*+klaar		*zijn*+klaar	
	met+INF	1.2	met+INF	1	met+INF	1.4
Non-Target						
Prospective	*gaan*+INF	20.7	*gaan*+INF	21.9	*gaan*+inf	20.2
	present tense	14.5	present tense	12.2	past tense	15.4
	past tense	11.7	non-finite	3.5	present tense	12.0
Imperfective	gaan+INF	30.5	*gaan*+INF	46.5	*gaan*+INF	44.7
	present tense	3.5	non-finite	4.5	present tense	3.4
	non-finite	5.5	present tense	1.7	past tense	4.8
Perfect	present tense	24.2	*gaan*+INF	29.2	copula	18.3
	copula	14.8	present tense	16.3	*zijn+adj/adv*	16.8
	zijn+adj/adv		copula		past tense	
	past tense	12.9	zijn+adj/adv	8	*gaan*+INF	16.3

Regarding the use of target constructions, Table 4-4 shows that, in the prospective condition, all groups use *gaan*+INF most frequently, followed by the construction with a modal. In the imperfective condition, the present tense is the form used most frequently by all groups, followed by the past tense. Further, all groups produce a small percentage of analytical constructions. It is remarkable that, in the perfect condition, the monolingual group exclusively uses the auxiliary *hebben,* whereas the other two groups show the expected uneven distribution of the auxiliaries *hebben*

and *zijn* (see footnote 4). A closer look at the data shows that the 0% of auxiliary *zijn* by the VY-monolinguals group is a reflection of the fact that two children exclusively use *hebben* more than 4 times, whereas the rest do not use any of the two auxiliaries. Note that, in all groups, many children do not use the construction aux+pparticiple yet. The few who use it, exclusively use one of the two auxiliaries. This leads to the conclusion that these three groups of children are not yet aware of the semantic restrictions associated with each auxiliary.

Concerning the non-target constructions used, Table 4-4 also shows that the most frequent error produced by all three groups of children in both the prospective and the imperfective conditions is the use of *gaan*+INF[42]. In the prospective condition, the percentages of *gaan*+INF do not differ much among the three groups, and in the imperfective condition, the two bilingual groups use higher percentages of *gaan*+INF than the monolingual group. In the perfect condition, even though the three groups show an overlap in the structures used, there is more variation among the groups in the percentages of each structure. The two bilingual groups use *gaan*+INF, whereas for the VY-monolinguals this construction does not fall within the three most frequent (they use it 12.5%, making it their fourth most frequent error). The VY-monolinguals and the Y-bilinguals use the past tense frequently, whereas the VY-bilinguals barely use this structure (2.1%). The Y-bilinguals use the present tense less frequently (13.0%) and the past more frequently (16.8%) than the younger children. This suggests that, despite no command of the right construction for expressing the perfect aspect, they are aware that the perfect condition refers to the accomplished events.

We may conclude from the above that there is a large overlap in the types of errors produced by the three groups of children in each condition, and that *gaan*+INF is extensively used by all groups, the VY-bilinguals using it the most.

Interestingly, children often accompany the verb in the present or past tense as well as the construction *gaan*+INF with lexical elements which signal near future such as *bijna* ('almost'), or *nog niet* ('not yet'); or *nu* ('now') to signal ongoingness; or *al* ('already') or *niet meer* ('no more'), to express perfect aspect. Example (5) illustrates this:

[42] In the prospective condition, the construction *gaan*+INF is grammatically correct, as are the present and the past tenses in the imperfective condition. The reason why they are considered incorrect is that a percentage of the utterances with these structures was produced with a verb other than the target verb.

(5) Expressing aspect with other lexical elements than a verb.

Picture 1	Picture 2	Picture 3
*Pingu gaat **bijna** huilen.* Pingu go.PRES.3SG almost cry. INF 'Pingu is almost crying.' Target: Pingu gaat huilen.	*Pingu gaat huilen.* Pingu go.PRES.3SG cry.INF 'Pingu is crying.' Target: Pingu huilt.	*Pingu gaat **niet meer** huilen.* Pingu go.PRES.3SG no longer cry.INF 'Pingu is no longer crying.' Target: Pingu heeft gehuild.

Dummy auxiliaries

Figure 4-4 shows the mean proportions of auxiliary *gaan* and error bars (+/- 2SE) in the three conditions for the three groups of children.

The first ANOVA was conducted to assess the effect of aspect and group on the use of the (dummy) auxiliary *gaan*[43]. The results show a significant main effect of aspect, $F(2, 88)=44.565$, $p=.000$, $\eta_p^2=.503$. The prospective condition differs significantly (pairwise comparisons, LSD) from imperfective ($p=.048$) and from the perfect condition ($p=.000$). The imperfective and the perfect conditions differ significantly from each other ($p=.000$).There is also a significant main effect of group, $F(2, 44)=4.417$, $p=.018$, $\eta_p^2=.167$. A post-hoc analysis (HSD) of the groups shows no significant difference between VY-monolinguals and Y-bilinguals ($p=.366$). The VY-monolinguals differ significantly from the VY-bilinguals ($p=.013$). The two bilingual groups do not differ significantly from each other ($p=.349$). No interaction effect was found between aspect and group, $F(4, 88)=.438$, $p=.781$, $\eta_p^2=.020$.

The second ANOVA shows no significant main effect of L1, $F(2, 25)=486$, $p=.621$, $\eta_p^2=.037$.There were no interaction effects: Aspect and L1 $F(4, 50)=1.134$, $p=.351$, $\eta_p^2=.083$; Aspect, L1 and group, $F(4, 50)=1.715$, $p=.161$, $\eta_p^2=.121$.

[43] The statistical analyses of the Narrative task include only the (dummy) auxiliary *gaan*, because this is the only dummy auxiliary extensively used by these children. The other dummies were used sporadically. Moreover, it is relevant for this study to see how these children behave in regard to the use of this construction in the different conditions, since this is the only construction that has meaning in Dutch. Its use in conditions other than the prospective provides additional evidence that it is a dummy auxiliary exempt of meaning.

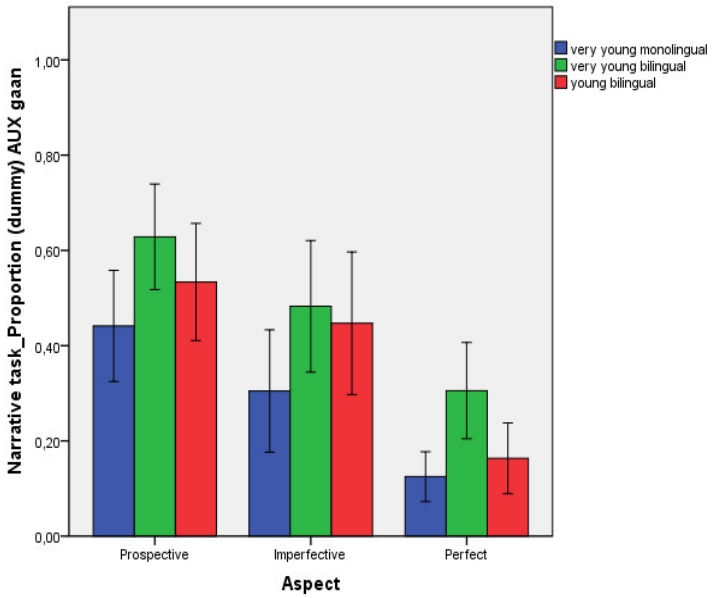

Figure 4-4. Mean proportions of dummy auxiliaries with error bars (+/- 2*SE*) in the conditions prospective, imperfective and perfect of the Narrative task, by age group.

4.3.3. Completion experiment Morphology: Present and past tense

Due to a limited concentration span or difficulty with the task, two of the younger children did not perform the present tense task, and ten did not perform the past tense task.

Reliability analyses were carried out on the items of each condition of the completion experiment Morphology. Both analyses revealed that the items have a high reliability: α =.968 and α =.933 respectively. In the present tense condition there were no deviant items, but in the past tense condition there were eight deviant items. These were particle verbs.

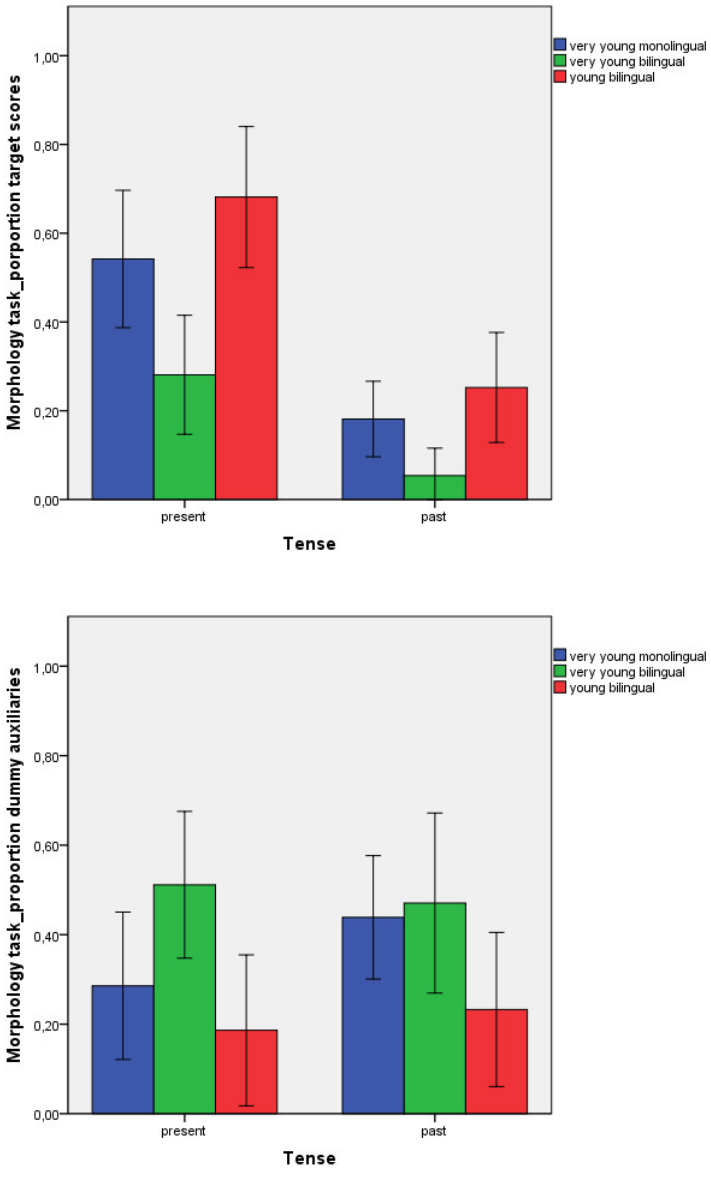

Figure 4-5. Mean proportions of target responses (top) and dummy auxiliaries (below), and error bars (+/- 2*SE*) per group of children for the two conditions.

Target scores and non-target responses

Two analyses were carried out. The first sought to test the overall accuracy of the responses in this task and the second to compare the number of dummy auxiliaries used[44]. The results are illustrated in Figure 4-5, which gives the mean proportions and error bars (+/- 2SE) of target responses and of dummy auxiliaries in the present and the past tense conditions, for the three groups of children. In Figure 4-5 a trade-off effect between target scores and dummy auxiliary use is clearly seen. The groups with higher percentages of target scores use less dummy auxiliaries and vice-versa. The past tense condition seems to be more difficult: all the groups have worse target scores in this condition than in the present tense condition. The two youngest groups use more dummy auxiliaries than the older children.

The first ANOVA on accuracy shows a main effect of tense, F(1, 32)=54.721, p=.000, η_p^2 =.631, and a main effect of group, F(2, 32)=6.983, p=.003, η_p^2 =.304. There was a significant interaction between tense and group, F(2, 32)=3.668, p=.037, η_p^2 =.187. Because of this interaction, we applied separate ANOVAs for the two conditions. The results show that a main effect of group existed only in the present tense condition, F(2, 41) =8.168, p=.001, η_p^2 =.285. A post-hoc test (HSD) revealed that the VY-bilinguals produce the least target responses and differ significantly from the Y-bilinguals (p=.001), and from the VY-monolinguals (p=.011). The Y-bilinguals and the VY-monolinguals do not differ significantly (p=.762). The Univariate ANOVA in the past tense shows no main effect of group, F(2, 32) =3.125, p=.058, η_p^2 =.163.

The second ANOVA shows no main effect of L1, *F*(2.17)=.011, *p*=.989, η_p^2 =.001. There were no significant interaction effects with L1: tense and L1, *F*(2.17)= .538, *p*=.593, η_p^2 =.060 and tense, group and L1, *F*(2.17)= .479, *p*=.628, η_p^2 =053.

Table 4-5 shows the target and the three most frequent non-target constructions used in this task. It shows that all groups use the target constructions, though the percentages among the groups vary considerably. It also shows that in the present

[44] Target utterances were those in which the target verb was used, and the finite form of the lexical verb agreed with the subject in the present and past tense respectively. The constructions '*zijn aan het* (be.PRES/PAST on the) + INF', '*zijn bezig met* (be. PRES/PAST busy with) + INF, and '*zitten*/*staan*/*liggen* te (sit/stand/lay.PRES/PAST to) + INF' were also considered correct for both conditions.

tense condition the monolingual group used only the present tense, whereas the bilingual groups not only used the present tense, but also – to a limited extent - prepositional constructions. The VY-bilinguals produce an extremely low percentage of past tense. The other two groups use it more often, but considerably less often than the present tense, indicating that none of the groups has a good command of this tense. This table also shows that the most frequent error across all three groups, in both conditions, is the use of the *gaat/ging* (go.PRES/PAST.3SG)+INF construction. An exception to this is the use of the present tense in the past condition, with almost equal frequency, by the Y-bilinguals. Of note is the use of the non-finite only by the VY-bilinguals in both conditions and the incorrectly inflected past tense by all groups. The use of non-finite forms reflects, as expected, a less advanced stage of acquisition than the other two groups. As for the incorrect inflection of past tense, an examination of the data revealed that this happens mainly with irregular verbs. This indicates that these children know which tense they have to use in that condition, but the inflection of irregular verbs is still difficult.

Table 4-5. Morphology task: target and non-target constructions produced in the two conditions by the three groups of children; non-target constructions include another lexical verb than the target lexical verb.

			Target			
Tense	VY-monolinguals		VY-bilinguals		Y-bilinguals	
Present	present tense	54.2%	present tense	26.0%	present tense	67.4%
			zijn+aan		zitten/staan	
			het+INF	2.1%	te+INF	0.2%
Past	past tense	18.1%	past tense	5.1%	past tense	25.2%
			Non-Target			
Present	*gaan*+INF	23.9%	*gaan*+INF	47.4%	*gaan*+INF	17.6%
	stem	5.0%	non-finite	6.5%	present tense	4.7%
	doen+INF	4.2%	stem	5.6%	stem	4.2%
Past	*ging*+INF	43.9%	*ging*+INF	38.5%	present tense	25.2%
	present tense	14.7%	non-finite	15.9%	*ging*+INF	22.8%
	incorrectly inflected past tense	7.6%	incorrectly inflected past tense	8.1%	incorrectly inflected past tense	12.4%

In this task, as in the Narrative task, all three groups of children made the same types of errors, suggesting the same path of development. An exception to this is *doen*+INF which is mainly used by the VY-monolinguals.

Dummy auxiliaries

The first ANOVA reveals no main effect of tense on the use of the dummy auxiliaries, $F(1.32)=.861$, $p=.360$, $\eta_p^2=.026$. There is a main effect of group, $F(2, 32)=5.448$, $p=.009$, $\eta_p^2=.254$. There is no interaction effect between tense and group, $F(2, 32)=1.923$, $p=.163$, $\eta_p^2=.107$. A post-hoc test (HSD) revealed that the VY-monolinguals do not differ significantly from the VY-bilinguals (p=.165) nor from the Y-bilinguals (p=.322). The Y-bilinguals and the VY-bilinguals differ significantly (p=.007).

The second ANOVA shows no significant main effect of L1, $F(2.17)=1.328$, $p=.291$, $\eta_p^2=.135$.There were no interaction effects: Tense and L1 $F(2.17)=1.624$, $p=.226$, $\eta_p^2=.160$; tense, L1 and group, $F(2, 17)=.403$, $p=.674$, $\eta_p^2=.045$.

Analyses for verb type

An ANOVA on accuracy in the present tense shows a main effect of verb type, $F(1.842, 75.505)=27.506$, $p=.000$, $\eta_p^2=.402$, and a main effect of group, $F(2, 41)=8.073$, $p=.001$, $\eta_p^2=.283$. There was no interaction between verb type and group, $F(3.683, 75.505)=.925$, $p=.448$, $\eta_p^2=.043$. Pairwise comparisons (LSD) show that regular verbs do not differ significantly from irregular verbs ($p=.176$), but differ significantly from particle verbs ($p=.000$). Irregular verbs also differ significantly from particle verbs ($p=.000$). A post-hoc test (HSD) revealed that the VY-bilinguals differ significantly from the VY-monolinguals ($p=.013$) and the Y-bilinguals ($p=.001$). The VY-monolinguals and the Y-bilinguals do not differ significantly from each other ($p=.731$).

An ANOVA on accuracy in the past tense shows a main effect of verb type, $F(1.939, 64.002)= 4.725$, $p=.013$, $\eta_p^2=.125$, and a main effect of group, $F(2, 33)=3.412$, $p=.045$, $\eta_p^2=.171$. There was no interaction between verb type and group, $F(3.879, 64.002)=1.121$, $p=.354$, $\eta_p^2=.064$. Pairwise comparisons (LSD) show that the regular verbs differ significantly from the particle verbs ($p=.005$), but not from the irregular verbs ($p=.113$). The irregular verbs do not differ significantly from the particle verbs ($p=.148$). A post-hoc test (HSD) revealed a significant difference between the VY-bilinguals and the Y-bilinguals ($p=.038$). The VY-monolinguals and the Y-bilinguals do not differ from each other ($p=.787$). The VY-bilinguals and the VY-monolinguals do not differ from each other ($p=.160$).

An ANOVA on dummy auxiliary use in the present tense condition of the Morphology task shows an effect of verb type, $F(1.603, 65.739)=11.463$, $p=.000$, $\eta_p^2=.219$. An effect of group was also found on dummy auxiliary use, $F(2, 41)=5.295$, $p=.009$, $\eta_p^2=.205$, but no interaction effect between verb type and group, $F(3.207, 65.739)=.152$, $p=.937$, $\eta_p^2=.007$. In the present tense condition particle verbs differ significantly from both regular ($p=.000$) and irregular verbs ($p=.012$) (pairwise comparisons, LSD). More dummy auxiliaries are used with particle verbs. No significant difference is found between regular and irregular verbs ($p=.075$). A post-hoc test (HSD) revealed a significant difference between the VY-bilinguals and

the Y-bilinguals (p=.009), and between the VY-bilinguals and the VY-monolinguals (p=.044). The Y-bilinguals and the VY-monolinguals do not differ from each other (p=.858).

In the past condition, no effect was found for verb type on dummy auxiliary use, $F(1.998, 65.950)=1.815$, p=.171, η_p^2 =.052. No effect of group was found, $F(2, 33)=2.814$, p=.074, η_p^2 =.146, nor an interaction effect between verb type and group, $F(3.997, 65.950)=.360$, p=.836, η_p^2 =.021.

4.3.4. Completion experiment Syntax: inversion and no-inversion

An analysis of the items' reliability was carried out for each of the two conditions of this task. The items in both conditions have a high reliability: The no-inversion condition has α=.903 and the inversion condition α=.935. There was one deviant item in the inversion condition. The no-inversion condition does not have deviant items.

Figure 4-6 shows the mean proportions of target responses and dummy auxiliaries and error bars (+/- 2SE) in the three conditions, by age group[45].

Target scores and non-target responses

In this task, as with the Morphology task, a trade-off effect between target scores and dummy auxiliary is observed. The higher the percentage of target responses, the lower the percentage of dummy auxiliaries, and vice-versa.

[45] One child did not complete the inversion task.

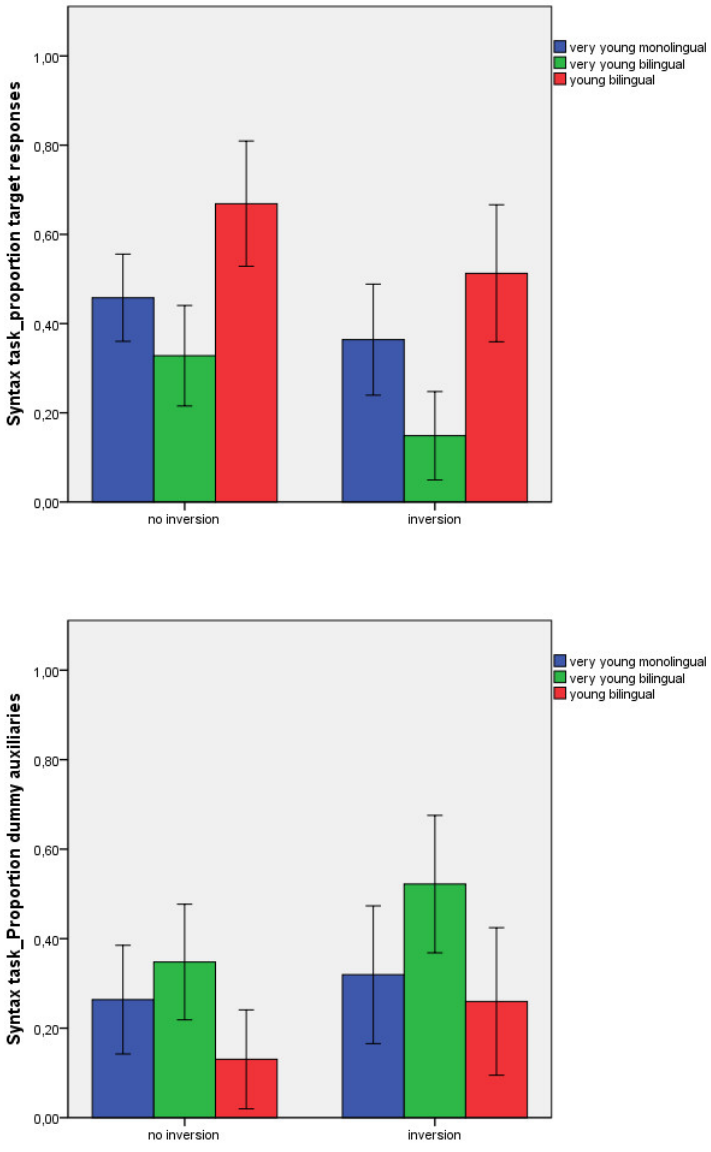

Figure 4-6. Mean proportions of target responses (top) and dummy auxiliaries (below) and error bars (+/- 2*SE*) per group of children

The first ANOVA on target responses[46] shows two main effects: of task, $F(1, 44)=42.246$, $p=.000$, $\eta_p^2=.490$, and of group, $F(2, 44)=9.592$, $p=.000$, $\eta_p^2=.304$. There was no interaction between task and group, $F(2, 44)=1.415$, $p=.254$, $\eta_p^2=.060$. A post-hoc test (HSD) revealed a significant difference between the VY-bilinguals and the Y-bilinguals ($p=.000$). There is no significant difference between VY-bilinguals and VY-monolinguals ($p=.078$) nor between Y-bilinguals and VY-monolinguals ($p=.099$).

The second ANOVA on the effect of L1 on target responses shows an effect of task, $F(1, 26)= 25.742$, $p=.000$, $\eta_p^2=.498$, no significant main effect of L1, $F(2, 26)=.952$, $p=.399$, $\eta_p^2=.068$, nor of group, $F(1, 26)= 2.940$, $p=.098$, $\eta_p^2=.102$. There are no interaction effects: group and L1, $F(2, 26)= 2.621$, $p=.092$, $\eta_p^2=.168$; task and group, $F(1, 26)=.018$, $p=.895$, $\eta_p^2=.001$, task and L1, $F(2, 26)=.364$, $p=.698$, $\eta_p^2=.027$; task, group and L1, $F(2, 26)= 1.025$, $p=.373$, $\eta_p^2=.073$.

Table 4-6 displays the target and non-target constructions used in this task. It shows that the three groups of children achieve the highest percentages of target constructions in the no-inversion order, suggesting that this condition is the easier of the two. The VY-bilinguals, in particular, show very low percentages of target constructions in the inversion condition. The table also reveals that, *gaan*+INF is the most often used construction in both conditions by all groups of children. Dummy auxiliary *doen* is produced only by the monolingual group. As with the other tasks, the VY-bilinguals still use non-finite verbs whereas the other two groups do not. Instead they use the stem, which can be considered a slightly more advanced stage of acquisition. In this task, just as in the other ones, the same errors, though in different percentages, occur across the three groups of children[47], suggesting the

[46] An utterance was considered target if all the following criteria were met: (1) in the inversion condition, inversion was realised (VS order), (2) the target verb was used, (3) the verb reflected imperfective aspect, and (4) the finite form of the lexical verb or the auxiliary verb was congruent with the subject.

[47] The reason why the present tense is included in Table 4-6 despite it being a grammatically correct construction in this condition, is that these utterances were produced with a verb other than the target verb and/or the children failed to invert the order of subject and verb in the inverted order condition. The latter occurred only sporadically.

same path of acquisition. It is important to mention that, when using the dummy auxiliary in the inverted order-condition, children do invert the subject and the auxiliary, showing a command of the V2-rule.

Table 4-6. Syntax task: target and non-target constructions produced in the two conditions split out for the three groups of children.

			Target			
Order	VY-monolinguals		VY-bilinguals		Y-bilinguals	
No inversion	Present tense	45.8%	Present tense	31.6%	Present tense	66.6%
			Zijn aan het+INF	1.1%	Zitten/staan te+INF	0.3%
Inversion	Present tense	36.1%	Present tense	13.8%	Present tense	51.3%
			Zijn aan het+INF	0.7%	Zitten/staan te+INF	0.3%
			Non-Target			
No inversion	Gaat+INF	22.9%	Gaat+INF	32.3%	Gaat+INF	12.7%
	Present tense	13.9%	Non-finite	9.8%	Stem	7.0%
	Stem	5.8%	Present tense	7.3%	Present tense	6.0%
Inversion	Gaat+INF	25.6%	Gaat+INF	50.0%	Gaat+INF	24.4%
	Present tense	15.0%	Present tense	10.3%	Present tense	12.8%
	Doet+INF	6.7%	Non-finite	9.9%	Stem	2.6%

Dummy auxiliaries

The first ANOVA for dummy auxiliaries shows that there is a main effect of condition, $F(1, 44)=29.185$, $p=.000$, $\eta_p^2=.399$, and no main effect of group, $F(2, 44)=3.148$, $p=.053$, $\eta_p^2=.125$. No interaction effect was found between condition and groups, $F(2, 44)=2.624$, $p=.084$, $\eta_p^2=.107$.

The second ANOVA revealed no effect of L1, $F(2, 26)=.352$, $p=.707$, $\eta_p^2=.026$. There were no interaction effects: group and L1, $F(2, 26)= 1.891$, $p=.171$, $\eta_p^2=.127$; task and L1, $F(2, 26)=.564$, $p=.576$, $\eta_p^2=.042$; task, group and L1, $F(2, 26)= 2.826$, $p=.078$, $\eta_p^2=.179$.

The main effect of condition, with lower target scores and more dummies in the inversion condition, can be taken as an indication that inversion is more difficult than the no-inversion order, and that syntactic difficulty leads to more dummy use.

Analyses for verb type

An ANOVA on accuracy shows, in the no-inversion condition, a main effect of verb type, $F(2, 88)= 34.019$, $p=.000$, $\eta_p^2=.436$, and a main effect of group, $F(2, 44)= 8.434$, $p=.001$, $\eta_p^2=.277$. There was no interaction between verb type and group, $F(4, 88)= 1.306$, $p=.281$, $\eta_p^2=.056$. Pairwise comparisons (LSD) show that the regular verbs differ significantly from the particle verbs ($p=.000$), and from the irregular verbs ($p=.000$). The irregular verbs differ significantly from the particle verbs ($p=.000$). A post-hoc test (HSD) revealed a significant difference between the VY-bilinguals and the Y-bilinguals ($p=.000$). The VY-monolinguals and the Y-bilinguals do not differ from each other ($p=.051$). The VY-bilinguals and the VY-monolinguals do not differ from each other ($p=.246$).

An ANOVA on accuracy in the inversion condition shows a main effect of verb type, $F(2, 88)=10.336$, $p=.000$, $\eta_p^2=.190$, and a main effect of group, $F(2, 44)=9.570$, $p=.000$, $\eta_p^2=.303$. There was an interaction effect between verb type and group, $F(4, 88)= 4.052$, $p=.005$, $\eta_p^2=.156$. Pairwise comparisons (LSD) show that regular verbs differ significantly from irregular verbs ($p=.002$), but not from particle verbs ($p=.095$). Irregular verbs differ significantly from particle verbs ($p=.000$). A post-hoc test (HSD) revealed that the VY-bilinguals differ significantly from the VY-monolinguals ($p=.033$) and the Y-bilinguals ($p=.000$). The VY-monolinguals and the Y-bilinguals do not differ significantly from each other ($p=.218$). The children with more exposure perform better than the children with less exposure on all verb types, particularly on irregular and particle verbs.

A repeated measures ANOVA reveals that, in the no-inversion condition, there is a significant main effect of verb type on dummy auxiliaries, $F(1.848, 81.331)=8.679$, $p=.001$, $\eta_p^2=.165$, but no effect of group, $F(2, 44) =3.074$, $p=.056$, $\eta_p^2=.123$. No interaction effect was found between verb type and group, $F(3.697,$

81.331)=.940, p=.440, η_p^2 =.041. Pairwise comparisons (LSD) show that more dummy auxiliaries are used with the particle verbs and that they differ significantly both from the regular verbs (p=.006) as well as the irregular verbs (p=.000). There is no significant difference between regular and irregular verbs (p=.724).

A repeated measures ANOVA on dummy auxiliaries in the inversion condition shows a main effect of verb type, F(2, 88)= 5.132, p=.008, η_p^2 =.104, but no main effect of group, F(2, 44)=3.181, p=.051, η_p^2 =.126. There was no interaction effect between verb type and group, F(4, 88)=1.736, p=.149, η_p^2 =.073. Pairwise comparisons show that regular verbs do not differ significantly from irregular verbs (p=.107), but differ significantly from particle verbs (p=.002). Irregular verbs do not differ significantly from particle verbs (p=.128).

4.3.5. Verb class effects

The high reliabilities we observed in all our experiments indicate that the four verb classes systematically represented in our stimuli did not exhibit divergent target answer patterns or divergent selection patterns of dummy auxiliaries. In this subsection we want to investigate in more detail the accuracy of dummy auxiliary scores in relation to the individual verbs and in particular to the four verb classes we have distinguished.

In the comprehension task, no clear pattern emerges showing the influence of verb class. When ordered from low to high, the target scores of the individual verbs show no clustering of a certain verb class on a particular point of the continuum.

In the Narrative task, the target scores of the individual verbs show a very gradual pattern when they are ordered from low to high. There are no peaks or outliers. Across all conditions, there are only a few individual verbs that behave differently. The most salient is the stative verb *krijgen* ('get/receive') in the prospective and in the imperfective conditions. The very low target score of this verb, particularly in the prospective condition (mean =.04o), suggests that expression of prospective aspect with this verb is more difficult than with other verbs. In the imperfective condition it is the resultative verb (de trap op) *lopen* ('walk up the stairs') that differs the most from all other verbs. Regarding the use of dummy auxiliaries, the verb *krijgen* elicits the lowest percentages in the prospective and imperfective conditions. What seems to be happening is that, in this task,

inflection accuracy is related to the characteristics of individual verbs, rather than to the verb class they belong to. The verb *krijgen* ('receive') was very often substituted for the verb *geven* ('give'), plausibly because children focus on the agent of the action expressed by a dynamic verb like *geven,* rather than on the agent of a less dynamic action, such as that expressed by the stative verb *krijgen*. Also the verb *oplopen* ('walk up'), with the least target responses in the imperfective condition, was often replaced by *klimmen* ('climb') which is a more common verb. *Klimmen* was considered correct, but because the stimulus verb was *oplopen,* many children produced an incorrect form of that verb, instead of substituting it for *klimmen.* The use of high percentages of dummy auxiliaries with verbs belonging to different verb classes, and with relatively high target scores, such as the stative *liggen* ('lay down'), the transitive *maken* ('make'), the intransitives *slapen* ('sleep') *and huilen* ('cry'), and the resultatives *springen* ('jump') and *vallen* ('fall') strongly suggests that dummy auxiliaries are not used to cope with difficulties with certain verb classes, but their use is rather related to characteristics of individual verbs and semantic alternatives.

In the present tense condition of the Morphology task, there are a few verbs that stand out, such as the intransitive verb *uitslapen* ('sleep out') with the lowest percentage of target scores, and the stative verb *kennen* ('know') with the highest percentage of target scores. In the past tense condition the transitive verb *voorlezen* ('read aloud') elicits no target responses and the stative verbs *zien* ('see') and *zitten* ('sit') induce the highest percentages of target scores. Regarding the use of the dummy auxiliary *gaan*, it is noticeable that, in the present as in the past tense, the two verbs with the lowest number of dummy auxiliaries are statives. These are the verbs *kennen* ('know') and *voelen* ('feel'). In addition, in the present tense condition, other stative verbs such as *vastzitten* ('be stuck'), *zien* ('see'), *zitten* ('sit') and *liggen* ('lay down') are among the verbs with the lowest percentages of dummy auxiliaries. The relatively high target scores of the verbs *kennen, zien* and *zitten* in the present study, in particular the verb *kennen*, and the high percentages of dummy auxiliaries with action verbs (more evident in the past tense condition), provide support for Jordens' (1990), Julien et al's. (chapter 2), Schlichting's (1996), and Wijnen's (1995b) finding that stative verbs are among the earliest acquired finite verbs (in V1 of V2 position).

The verb patterns found in the Syntax task corroborate those of the Morphology task. It is noteworthy that, in the no-inversion condition, the five verbs with the lowest percentages of dummy auxiliaries are also statives: namely, the verbs *lusten*

('like'), *vastzitten* ('be stuck'), *zeggen* ('say'), *zien* ('see') and *denken* ('think'). The same verbs, particularly the verb *lusten*, yield relatively high target scores. In the inversion condition, the stative verbs *kennen* ('know') and *voelen* ('feel') stand out as the two verbs with the lowest percentages of target scores as well as of dummy auxiliaries. The low percentages related to these verbs have to do with the fact that they are often replaced by the expression *hand geven* ('shake hands') and the verb *hebben* ('have') respectively.

In sum, in this task, particularly in the no-inversion condition, an effect of verb class (statives) can be seen with respect to dummy use. Even though most verbs behave similarly, there is a tendency for statives to elicit no or few dummy auxiliaries and action verbs to elicit more.

4.3.6. Summarizing the results

The variability among the participants in the use of dummy auxiliaries in the various production tasks is large within groups (as evidenced by the long error bars in almost all figures shown above), showing that there are clear individual differences. Some children use dummy auxiliaries more frequently than others. Nevertheless, we found effects in our experiments that are summarized in Table 4-7.

The frequency of dummy auxiliary *gaan* across all experiments and groups is 2201 (95.1%). The other dummy auxiliaries have much lower frequencies: *doen* 79 (3.6%), *zijn* 23 (1.0%) and *hebben* 5 (0.2%).

Table 4-7. Global effects of condition, group and L1 on the target scores and dummy auxiliaries.

	Comprehension: Aspect		Narrative: Aspect		Completion task Morphology: Tense		Completion task Syntax: Inversion	
Target	Aspect	+	Aspect	+	Tense	+	Inversion	+
	Group		Group		Group	+	Group	+
	L1		L1	+	L1		L1	
					Verb Type	+	Verb Type	+
					Tense x Group	+	Verb Type x Group	+
Dummy Auxiliary	d.n.a.		Aspect	+	Tense		Inversion	+
			Group	+	Group	+	Group (p=.053)	(+)
			L1	–	L1		L1	
					Verb Type (in the present)		Verb Type	+
			Verb Class	(+)	Verb Class	(+)	Verb Class	(+)

L1 = First language; - = no effect ; + = effect

4.4. Discussion

The aim of this study was to investigate whether, and in what ways, dummy auxiliaries play a role in the acquisition of finiteness in Dutch. Four experimental studies were carried out. As predicted (research question 1), dummy auxiliaries, particularly the dummy *gaan*, are used in all production tasks by L1 and L2 children, albeit with great individual variance. Having established this, it was important to find out whether these children assign meaning to dummy auxiliaries (research question 2). The prediction, based on the study of Julien et al. (2015) on adult learners, that children in the beginning of the acquisition process (the VY-bilinguals) would assign a neutral meaning to *gaan/zijn*+INF, was confirmed. The results corroborate studies by Zuckerman (2001; 2013) and Verhagen (2013) that have respectively shown that young monolingual children do not associate *gaan*+INF with prospective aspect and adult bilinguals do not assign perfect meaning to *zijn*+INF. Remarkably, it turns out that not only the VY-bilinguals, but also the other two groups with more exposure to Dutch, assign a neutral meaning to both (dummy) auxiliaries. Given that none of the groups reach more than 30% target responses in the prospective condition of the comprehension task, we conclude that comprehension of the prospective meaning of *gaan*+INF is not completely acquired by all children within the first five years of exposure to Dutch. This conclusion is supported by the fact that, in the Narrative task, these children use lexical means, in combination with any of the above mentioned constructions, to express aspect.

It was predicted that LoE would influence the use and choice of dummy auxiliaries (see research question 3). The two groups of children with the same length of exposure to Dutch, the VY-monolinguals and the Y-bilinguals, performed similarly in their dummy auxiliary use in all tasks. However, the expected significant difference between the VY-bilinguals, having had approximately 2 years less exposure to Dutch, and the other two groups (the VY-monolinguals and the Y-bilinguals) was confirmed for some but not all the tasks. The difference between the group with less exposure and the groups with more exposure was found only in the Narrative and the Morphology tasks, arguably the most difficult tasks. In the Narrative task the significant difference was, as expected, between the VY-bilinguals and the VY-monolinguals, but not between the VY-bilinguals and the Y-bilinguals. In the Morphology task, the difference was between the VY-bilinguals and the Y-bilinguals, but not between the VY-bilinguals and the VY-monolinguals. LoE does not have a significant effect on the use of the dummy auxiliary in the Syntax task.

The nature of each task and the complexity of each condition within the tasks may explain this finding. The Narrative task involves not only morphosyntactic knowledge, but also the ability to express aspectual nuances. The Morphology task requires knowledge of tense and inflection (present and past), and the Syntax task involves knowledge of both inflection (present) and verb placement (only in the inversion condition). The target scores show that expressing aspect, particularly perfect aspect, is difficult for all groups. This can be deduced from the fact that no group effect was found in the Narrative task: none of the groups produced more than 8% of target responses in that condition nor did they produce more than 40% in the other two conditions. Expressing past tense (Morphology task) also proved to be difficult for all groups, as no significant effect of group was found and the highest percentage of target responses was 25.2%. In the present tense condition of the Morphology task and in both conditions of the Syntax task there was a significant effect of group. These two tasks seemed to be the easiest, particularly for the Y-bilinguals who produced respectively 67.6% and 66.6% target responses. The VY-monolinguals had respectively 54.2% and 45.8% target responses, and the VY-bilinguals 28.1% and 31.6%. Although no significant group effect was found, the inversion condition is slightly more difficult than the no-inversion condition, as can be inferred by comparing the percentages of target responses: the Y-bilinguals reached 51.3% target responses, the VY-monolinguals 36.1% and the VY-bilinguals 13.8%. Hence it can be concluded that as regards the production of target

constructions, an effect of LoE exists for the two easiest tasks (present tense and no-inversion condition of the Syntax task), but not for the more difficult tasks, namely the Narrative (expression of aspect) and the Past tense tasks.

However, the picture that arises when looking at dummy auxiliary use is not as clear. In the Narrative task, as expected, a significant difference was found between children with the same age and different LoE (VY-monolinguals and VY-bilinguals), and no significant difference between children with different age and the same LoE (VY-monolinguals and Y-bilinguals), showing that different LoE has a significant effect on dummy use. Surprisingly, LoE does not seem to apply to the two bilingual groups, since no significant difference was found between the VY-bilinguals and the Y-bilinguals. A consideration of the percentages of dummy auxiliaries used by the three groups may elucidate this outcome. In the imperfective condition, the monolinguals use 30.5% dummy *gaan*, whereas the Y-bilinguals use 44.7% and the VY-bilinguals 46.5%. Hence, even though the Y-bilinguals produce fewer dummy auxiliaries than the VY-bilinguals, the difference between the two groups is not large enough to lead to a significant difference. It is plausible that the bilingual children have not had the amount and quality of exposure needed to understand the prospective meaning of *gaan*+INF and consequently to abandon its use when expressing imperfective aspect. In other words, LoE is not the only factor influencing the rate of reduction of dummy auxiliaries. The amount and quality of exposure may also play a role, and the absence of those two factors may explain the slower reduction of dummy auxiliaries in the Y-bilinguals, than in the VY-monolinguals, and the lack of a significant difference between the VY-bilinguals and the Y-bilinguals.

In the Morphology task, again as expected, no significant difference was found between children with different ages and the same LoE (VY-monolinguals and Y-bilinguals) and a significant difference was found between children with different ages and different LoE (VY-bilinguals and Y-bilinguals), showing that LoE has a significant effect on dummy use. The unexpected outcome in this task was that no significant difference was found between children with the same age and different LoE (VY-monolinguals and VY-bilinguals). A consideration of the percentages of dummy auxiliaries in each of the conditions of this task explains this finding. The VY-monolinguals produced 23.9% dummy auxiliaries in the present and 43.9% in the past, and the VY-bilinguals produced 47.4% in the present and 38.5% in the past. These percentages show that, in the present tense, although the difference between the VY-monolinguals and the VY-bilinguals is not significant, the former

use much fewer dummy auxiliaries than the latter. This suggests that LoE does indeed exert an influence, though not at a significant level. In the past tense something else seems to be at play. Here, the absence of a significant difference between these two groups results from the fact that both use dummy auxiliaries extensively. The use of the dummy auxiliary (mainly *ging*+INF) by the VY-monolinguals increases rather than decreases. This increase in the use of dummy auxiliaries by this group (and, as a matter of fact, also by the Y-bilinguals) has probably to do with the difficulty of inflecting the past tense and the lack of understanding of the prospective meaning of *gaan*+INF. Because they ascribe a neutral meaning to this construction (see the results of the comprehension task) and because they have found out that *ging* expresses the past tense, they use this economical construction, which allows them to express the past tense without having to inflect and move the lexical verb. The higher percentages of this dummy in this group than in the VY-bilinguals suggest that they are further 'ahead' in this process, though not significantly, than the latter group. In the Syntax task, no significant effect of LoE was found on dummy auxiliaries. Here again, an examination of the percentages (Table 4-6) suggests that LoE does influence the use of dummy auxiliaries, given that the groups with more exposure produce considerably fewer dummy auxiliaries.

It can indeed be concluded that the nature of each task and the complexity of each condition within the tasks explains the finding that the differences in dummy use between the children with less exposure to Dutch and those with more exposure are not straightforward. In the Narrative task the significant difference was, as expected, between the VY-bilinguals and the VY-monolinguals, but not between the VY-bilinguals and the Y-bilinguals. In the Morphology task, the difference was between the VY-bilinguals and the Y-bilinguals, but not between the VY-bilinguals and the VY-monolinguals. LoE does not have a significant effect on the use of the dummy auxiliary in the Syntax task. It seems that when the task requires only inflection, such as the Morphology task (particularly the present tense condition), children learn it quickly and dummy auxiliary use decreases with LoE, though not always leading to significant differences. When the task becomes more complex, requiring the expression of aspect (Narrative task) or the past tense (Morphology task), the advantage of more exposure is less clearly visible. Due to the complexity of those tasks, children are not able to show their command of inflection - which they have already acquired (evidenced by the high target scores in the present tense

condition of the Morphology task and the no-inversion condition of the Syntax task) - and, therefore, fall back into the use of dummy auxiliaries.

Regarding the choice of dummy auxiliaries, the prediction that the children with less exposure to Dutch would use more dummy *zijn* ('be') than the groups with more exposure to Dutch, was confirmed only to a certain extent. Although all groups favour the use of the dummy *gaan,* eight VY-bilinguals (out of 19) used the dummy *zijn*, four of them more than once, whereas only two monolinguals (out of 16) and three Y-bilinguals (out of 13) used that dummy auxiliary only once. Despite the small number of participants, these findings provide support to those of Julien et al. (chapter 2) and Julien et al. (chapter 3), that the dummy *zijn* is used in the early periods of language acquisition, and that its use decreases as the dummy *gaan* increases and eventually takes over. As for the choice of the dummy *doen*, the results suggest that it is driven by dialectal exposure, since only two children who live in a regional environment where this dummy auxiliary occurs use it more extensively.

The finding that the L1 language background of the bilingual children (see research question 4) does not influence the choice of dummy auxiliary corresponds to Julien et al's. (chapter 3) results that revealed that L1 language background does not have a significant effect on dummy choice by adult DAL learners. This strongly corroborates the hypothesis that dummy choice is primarily determined by target language input (see Blom and De Korte, 2011; Julien, chapter 2; Zuckerman, 2001).

The next question we posed (research question 5) was whether the use of dummy auxiliaries increases as morphosyntactic demands increase. An effect of condition was found in the Syntax task, with lower target scores and more dummies in the inversion condition. This can be taken as an indication that inversion is more difficult than the no-inversion order, and that syntactic difficulty leads to more dummy use. This corroborates Blom and De Korte's findings (2011), and provides evidence that, not only second language learners aged between 4;8 and 8;2 - the age range of the participants in their study -, but also first language learners aged 3;6 to 5;7 , use this strategy, presumably as a way of coping with the difficulty caused by the increased number of syntactic steps required to place the lexical verb in V2-position.

It was also predicted that dummy use is influenced by the morphological complexity caused by verb type. The results show an effect of verb type on dummy use in the present tense condition of the Morphology task and in both conditions of the Syntax task. As predicted, particle verbs elicited more dummy auxiliaries and

differ significantly from both regular and irregular verbs. Contrary to the prediction, regular and irregular verbs do not differ significantly from each other, and, in the inversion condition, particle verbs and irregular verbs do not differ significantly from each other.

The final question (research question 6) concerned the effect of verb class on dummy auxiliary use. An examination of the behavior of the individual verbs showed an effect of verb class on dummy use in the Morphology and the Syntax tasks. In those tasks, a tendency was observed for stative verbs - particularly those indicating internal states - to elicit no or only a few dummy auxiliaries, a finding that corroborates those of earlier studies (see Jordens, 1990; Julien et al., chapter 2; Schlichting, 1996; Wijnen, 1995b). Furthermore, high percentages of dummy auxiliaries are used with verbs belonging to diverse verb classes, which strongly suggests that dummy auxiliaries are really meaningless, and that their use is influenced by factors such as the characteristics of, and familiarity with, individual verbs used rather than by semantic aspect, as exemplified with the verbs *krijgen* ('get/receive') and *voelen* ('feel') which were consistently substituted by the presumably easier and more familiar verbs *geven* ('give') and *hebben* ('have').

4.5. Concluding remarks

The results of the present study show that the dummy auxiliary *gaan* is widely used, and that its use lasts much longer than claimed in earlier studies (see Zuckerman, 2001, 2013). Monolingual children up to 5;7 years and bilingual children up until 7;9 years still do not completely grasp the prospective meaning of *gaan*+INF and, presumably therefore, keep using dummy *gaan* extensively. This finding corroborates that of Hollebrandse et al. (2013) in which it was found that monolingual five-year-olds still produce the dummy auxiliary *gaan* extensively.

Since the results clearly show that children with less exposure to Dutch use more dummy auxiliaries, it seems plausible that dummy auxiliaries are indeed used to reduce morphosyntactic difficulties, as suggested by various researchers (see section1.1). However, even after having acquired verb fronting and inflection – as demonstrated in this study by the relatively high percentages of present tense and past tense use, sometimes almost as often as the construction *gaan*+INF - children keep using dummy *gaan* in free alternation with the finite verb. The results of the comprehension task lead to the conclusion that this is most likely to happen because they have not yet acquired the adult semantics of *gaan*+INF. What prevents them

from grasping the meaning of that construction? In our view, at this stage of language acquisition, children have not yet figured out that Dutch has various verb forms and verbal constructions to express tense-temporal aspectual perspectives, and that *gaan*+INF is one of them. Aspect is mainly expressed through lexical means, and tense is carried by dummy auxiliaries: *gaan* for present and *ging* for past.

We suggest that it is the length (and presumably also the amount and quality) of exposure that triggers the use of more fine-grained semantic-aspectual distinctions and the letting go of dummy auxiliaries. The results of the present study support this view: Y-bilinguals and VY-monolinguals use considerably fewer dummy auxiliaries than the VY-bilinguals in almost all conditions.

From the above, it is clear that LoE to the language is a better measuring tool than age for drawing comparisons between monolinguals and bilinguals: a conclusion which corroborates that of Blom, 2010; Gathercole and Thomas, 2005; Unsworth et al., 2015 (see the rationale for grouping the participants in 2.3). An even better measuring tool would take into account the amount of exposure, expressed for instance in hours of continuous and regular exposure to the languages in question and the quality of exposure. Unfortunately this information was not available in this study.

Part of our rationale was also that if the VY-bilinguals and the VY-monolinguals performed equally well, this would mean that it does not take more than 1;6 to 3;3 years (that is the LoE to Dutch the VY-bilinguals have had) to reach the same level as the monolingual group on that particular linguistic aspect. The results of the imperfective condition of the Narrative task, and the no-inversion condition of the Syntax task, confirm that this is indeed the case.

5. Dummy auxiliary use by Dutch speaking monolingual and bilingual children with Language Impairment

Draft article: Julien, Manuela, Van Hout, Roeland and Van de Craats, Ineke . Dummy auxiliary use by Dutch speaking monolingual and bilingual children with Language Impairment. To be submitted

Abstract

The central question of the present study is whether dummy auxiliaries have a role in the acquisition of finiteness in Dutch by monolingual and bilingual SLI children, and what that role is. The results of experimental data on language production reveal that SLI children acquiring Dutch as a first or second language, aged 4;1 through to 9;7, use dummy auxiliaries, particularly zijn *('be') and* gaan *('go'), prior to the productive use of the finite lexical verb in Verb Second (V2) position. Length of exposure to the target language influences the frequency and choice of dummy auxiliaries produced. Production experiments revealed that within six to eight years of exposure, the use of the dummy gaan decreases to around 3% while finite verbs in V2-position increase to around 77%. The dummy* zijn *fades out within the first three years of exposure. The language background of the bilingual children plays a minor role in that context. A comprehension experiment revealed that it takes seven to eight years of exposure to Dutch to understand the prospective meaning of the construction gaan+INF. Before that time, the majority of the participants assign a neutral meaning to that construction.*

The experimental results also showed that the use of dummy auxiliaries intensifies with increased morphological (past tense) and morphosyntactic complexity (inversion and verb type). No clear effect of lexical aspect was found, though a tendency was observed for certain stative verbs not to occur with dummy auxiliaries.

The findings show that dummy auxiliaries are used prior to adult-like command of inflection and movement of the lexical verb to the V2-position, and function as first carriers of inflection and at a later stage, tense. The early and prolonged use of the gaan+INF construction, without its prospective meaning, can be taken as an indication that, in the acquisition of the prospective aspect in Dutch, form precedes meaning. We discuss the observed errors and acquisition patterns and the probable source(s) of SLI children's difficulties in acquiring finiteness.

5.1. Introduction

5.1.1. General introduction

In Dutch, as in many other languages[48], verbal morphosyntax is often considered one of the most difficult aspects of grammar to acquire, particularly by children with Specific Language Impairments, SLI[49], (De Jong, 1999; Orgassa, 2009; Steenge, 2006; Verhoeven, Steenge and Van Balkom, 2011; Wexler, Schaeffer and Bol, 2004; Zwitserlood, 2015; Zwitserlood, Van Weerdenburg, Verhoeven and Wijnen, 2015). Monolingual and bilingual SLI children acquiring Germanic languages leave out verbal grammatical morphemes in contexts where finite verb forms are obligatory. They do this up until an age in which such errors are no longer evidenced in children with a typical development (Bishop et al., 2006; Blom and Paradis, 2013; Conti-Ramsden, 2003; De Jong, 1999; Jacobson and Livert, 2010; Jacobson and Schwartz, 2005; Paradis, 2008; Redmond and Rice, 2001; Rice et al., 1998; Rice et al., 2000). SLI children have also been observed to overuse dummy auxiliaries[50] as illustrated in (1) (De Jong, 1999; De Jong, Blom. and Orgassa, 2013; Jolink, 2009; Orgassa 2009, Zwitserlood, 2015).

(1) *Mama* *is / gaat / doet* *werk-en*
Mama be / go / do.PRES.3SG werk-INF
'Mom is working.'
Target: Mama werkt / Mama is aan het werken.

Some years ago, while working as a clinical linguist, the first author of this article often observed the construction *gaan*+INF in the language of children referred to the Audiology and Speech and Language Centre where she worked. Other dummy

[48] Evidence of problems with verb morphology comes from research on a number of languages, such as English (e.g., Fletcher and Ingham, 1995), German (Clahsen, 1989), Italian (e.g., Bortolini, Caselli, and Leonard, 1997), French (e.g. Paradis and Crago, 2000), Swedish (e.g. Hansson, Nettelbaldt, and Leonard, 2000), and Hebrew (e.g. Dromi, Leonard, Adam, and Zadunaisky-Ehrlich, 1999).

[49] In recent years, the use of the term SLI as a diagnostic label for children with 'unexplained language problems' and the validity and usefulness of exclusionary criteria, are increasingly being questioned. For a thorough discussion of this issue, see Bishop (2014); Reilly, Bishop and Tomblin (2014); Reilly, Tomblin, Law, McKean, Mensah, Morgan, Goldfeld, Nicholson and Wake (2014). Although we are in favour of dropping the term *specific* because, among other reasons,'pure cases' are an exception and therefore not representative of children in the clinical context, we will use it in this article in order to avoid confusion between our terminology and that of previous studies.

[50] According to Barbiers (2013:395) 'Dummy auxiliaries are defined as semantically empty words that in certain stages of L1 or L2 acquisition occur in syntactic positions where the main verb occurs in the native adult language. *Doen* ('do'), *hebben* ('have'), *zijn* ('be') and *gaan* ('go') occur as dummies in Dutch L1 and L2.'

auxiliaries were much less frequent. Only twice in twelve years of clinical work did she come across children who used the dummy auxiliary *zijn* extensively. An example of an utterance produced by one of those children, a bilingual Tamil-Dutch speaking boy aged 5;6, is given in (2).

(2)	*Hij*	*is*	*zitten*
	Hij	be.PRES.3SG	sit.INF
	'Hij	is sitting.'	
	Target: Hij zit.		

However, dummy auxiliaries are not used exclusively by SLI children. They have also been noted in the language of Typically Developing (TD) monolingual and bilingual children (Blom and De Korte, 2011; Cornips, 2013; De Jong, 1999; Hollebrandse, Van Koert, and Van Hout, 2013; Hulk and Cornips, 2005; Jordens, 1990 and 2002; Lalleman, 1986; Van Kampen, 1997; Zuckerman, 2001 and Julien et al. (chapter 4). Adult learners of Dutch as an Additional Language (DAL) also make extensive use of dummy auxiliaries, as has been observed by various researchers such as Blom and De Korte (2011), Van de Craats (2009), Van de Craats and Van Hout (2010), Verhagen (2009), and Julien et al. (chapter 3). Also noteworthy is that dummy auxiliaries have been recorded in creole languages (e.g. Rickford, 1975; Velupillai, 2002) and in learner varieties of adults and children learning languages from different language families, such as French and German (Schimke, 2013), L2 German (Becker, 2005); English (Huebner, 1989; Huebner, Carroll, and Perdue 1992; Fleta 2003; Garcia Mayo, Ibarrola, and Liceras, 2005; Tracy, 2002; Zobl, 2002); Mandarin (Soh, 2007) and Monnese, a Lombardion dialect in Nothern Italy (Benincà and Poletta, 2004). This suggests that the use of dummy auxiliaries may be a more universal phenomenon than previously thought, and an important step in the process of language acquisition and language learning.

Recent research (Hollebrandse, Van Koert and Van Hout, 2013; Julien et al., (chapter 4)) has shown that TD children acquiring Dutch use dummy auxiliaries for longer periods of time than were found in earlier studies (e.g. Wijnands, 1995, 1996; Zuckerman, 2001). Wijnands argued that dummy auxiliary use in young children can be seen as a reflection of auxiliary use in the input and observed that the use of the dummy *gaan* and *doen* decreases in frequency at around 4 years of age. According to Zuckerman the use of dummy auxiliaries occurs between the ages of about two to four years. Older children rarely produce them, the reason being that four-year-old children have already understood the semantic restrictions that exist on

auxiliaries in Dutch. Until that age children mistakenly consider the *gaan*+INF and *doen*+INF constructions as identical to the standard finite form of the lexical verb, and thus as a grammatical option for describing an ongoing event. This age threshold is thus contradicted by Hollebrandse, Van Koert and Van Hout (2013) and Julien et al. (chapter 4), who respectively found that monolingual five-year-olds, and monolingual five-year-olds and bilingual seven-year-olds both still use dummy auxiliaries with considerable frequency. According to Julien et al. (chapter 4), children keep using the dummy *gaan* in free alternation with the finite lexical verb due to lack of understanding of the real prospective meaning of *gaan*+INF. Hollebrandse, Van Koert and Van Hout (2013) suggest that children keep using dummy auxiliaries because they are morphologically, syntactically and morphosemantically easier. They are easy to learn and quick to retrieve, they spell out tense features in the T-position without movement of the lexical verb, they perform existential closure over the event (see footnote 31), and once *ging* 'went' and *gaat* 'goes' are differentiated, they also carry temporal semantics.

Successive bilingual TD children appear to use dummy auxiliaries more extensively than monolingual TD children (Blom and De Korte, 2011; Lalleman, 1986), and monolingual SLI children use dummy auxiliaries more extensively than monolingual TD children (De Jong, 1999; Zwitserlood, 2015). This raises the question whether there is a similarity in acquisition behaviour between monolingual SLI children and successive bilingual TD children. Such an overlap in behaviour would complicate the process of diagnosing SLI in bilingual children. The frequent comparison between monolingual SLI children and bilingual TD children is, however, misleading given that their experiences in terms of language exposure are not equivalent. Also, the different language backgrounds of the bilingual children may account for some differences in error patterns. Recent research has shown that L2 children transfer verb inflection knowledge from their L1 (Blom and Baayen, 2012; Blom, De Jong, Orgassa, Baker and Weerman, 2013).

In order to avoid erroneous conclusions, comparisons must be made between comparable groups, that is to say, between bilingual SLI children and bilingual TD children with the same language backgrounds.

Dummy auxiliaries in SLI

Most studies on SLI in Dutch have focused on grammatical errors (Bol and Kuiken, 1988; De Jong, 1999; Steenge, 2006; Blom et al., 2013; Verhoeven, Steenge and Van Balkom, 2011; Zwitserlood, 2015). The use by SLI children of dummy

auxiliaries instead of inflected verbs has, since De Jong, 1999, not been given much attention until recently. Preference for a less complex (a dummy auxiliary) over a more complex grammatical form (finite verb in V2 position) is consistent with theories of SLI according to which the processing capacities of SLI children are more limited than those of TD children (see Leonard, 1998 and Marinis, 2011).

Four recent studies on the acquisition of verb inflection in Dutch by bilingual and/or monolingual Dutch speaking SLI children will be discussed here because of their detailed observations on dummy auxiliary use by those children (Bastiaanse, Bol, Van Mol and Zuckerman, 2002; De Jong et al., 2013; Orgassa, 2009; Zwitserlood, 2015).

The study by Bastiaanse et al. (2002) compared monolingual Dutch SLI children, aged 4;10 to 6;11 years, with younger TD children, aged 3;0 to 3;10, and a group of adult agrammatic Broca's aphasics, aged 27- 67. They used an experimental task in which the participants had to complete sentences with a finite verb. They found that the TD children used significantly more dummy auxiliaries than the SLI children. The three populations were able to produce correct finite lexical verbs when they were in base-generated position (final in embedded clauses), meaning that verb morphology was not impaired. However, they produced many errors when they had to move the verb to an initial position in main clauses, suggesting syntactic problems. The TD children avoided the difficulty by inserting dummy auxiliaries, while the other two groups produced the word order (OVFIN) that is only allowed in embedded clauses. They therefore concluded that the most frequent error aphasic and SLI children produce in matrix clauses are word order errors.

De Jong et al.'s study (2013), which also used a sentence completion task, showed that children diagnosed with SLI, aged 7;2 (L1) and 8;0 (L2), use dummy auxiliaries extremely frequently. Some of the SLI children used dummy auxiliaries almost exclusively (>90%). An effect of SLI on dummy auxiliaries was observed only in the monolingual group. The bilingual SLI group showed a tendency to use more dummy auxiliaries than the bilingual TD group, but the difference was not sigificant. This study has also shown that dummy auxiliaries occur more frequently in main clauses (which require verb movement) than in dependent clauses (which do not require verb movement). This supports the notion of an additional processing load for using inflection in main clauses, according to which increase in syntactic complexity leads to an increase in errors with verb inflection (Blom et al., 2013; Blom and Baayen, 2012) and plausibly, an increase in dummy auxiliary use.

Orgassa's study (2009) on Dutch-Turkish bilingual children using an elicitation procedure in the form of picture and activity description tasks also revealed that SLI children used more dummy auxiliaries than TD. The age of the SLI children in this study ranged from 6;0 to 8;3 years, and that of the TD children from 4;0 and 8;5 years. She also found that most of the SLI children (both bilingual and monolingual) knew how to apply the verb placement rules to lexical finite verbs. She therefore raised the question: 'Why do they then avoid lexical verb movement to V2 more often than TD children and use dummy auxiliaries and root infinitives instead?' Orgassa based her answer on Bishop's (1994, 2000) proposal that limited processing capacities prevent SLI children from applying rules if the task is too complex for them. They then resort to less costly operations and make more errors. Failure to apply the V2 rule (moving the verb to the second position in main clauses) by Orgassa's SLI participants fits this explanation. Orgassa's results also show that there were no significant differences in the use of dummy auxiliaries between monolingual and bilingual SLI groups, and that the overuse of dummy verbs is mainly related to having SLI.

In Zwitserlood's study on SLI in monolingual Dutch speaking children (2015), a group of SLI children, mean age 6;4 years, was compared with a Language Age (LA) group, mean age 4;5 years, and a Chronological Age (CA) group, mean age 6;5 years, at three points over time on a narrative task. The interval between the time points was 12 months, covering a period of two years of language development. The results showed that, in the LA group, the use of dummy auxiliaries increased significantly between time point (T)1 and T2, and decreased significantly between T2 and T3. In the CA group, the use of dummy auxiliaries decreased significantly only between T1 and T3. Between T1 and T2 there was a stagnation of dummy auxiliary use in this group. In the SLI group the use of dummy auxiliaries did not decrease significantly between any of the time points. The different developmental trajectory of the SLI group (they not only use dummy auxiliaries more frequently than the TD children, but also, contrary to the results of the two studies mentioned previously, show no sign of reduction of their use) led Zwitserlood to the conclusion that dummy auxiliary use by SLI children is deviant from that of TD children.

In sum, the results of three of the four studies led to the conclusion that extensive and prolonged use of dummy auxiliaries is associated with SLI. Of those three studies, only two (De Jong et al., 2013; Orgassa, 2009) found a decrease with age in the use of dummy auxiliaries in the SLI groups. Zwitserlood's study did not confirm a decrease in dummy auxiliary use across the three assessment moments.

Zwitserlood observed that this unchanging use of dummy auxiliaries paralleled a steady decrease of error rates in subject-verb agreement and verb placement. Thus SLI children learn the verb inflection paradigms and verb-second rule, but keep using dummy auxiliaries.

According to Orgassa (2009) and De Jong et al. (2013) children use dummy auxiliaries as a strategy to avoid overload. By using dummy auxiliaries, children produce syntactic structures that are less complex and involve morphological forms that require minimal morphological computation. Zwitserlood, on the other hand, suggests that the unchanged rates of dummy auxiliaries could be interpreted as a form of fossilization. Due to poor inhibition skills, SLI children, who use dummy auxiliaries extensively, are prone to keep activating and selecting them from the mental lexicon, even after having acquired verb-second. Another explanation that Zwitserlood offers for the overuse of dummy auxiliaries is that it might be related to poor lexical retrieval in SLI children and "The insertion of a dummy verb at verb second position might function as a stalling device, offering the children extra time to retrieve the lexical verb" (Zwitserlood 2015:45).

Bastiaanse et al.'s (2002) study revealed a pattern of dummy auxiliary use different from those observed in the other three studies. In their study TD children used significantly more dummy auxiliaries than the children with SLI, who hardly used them. The SLI children were somewhere in between the TD children and the agrammatic aphasics, but tended to follow the non-grammatic pattern: no use of dummy auxiliary and no movement of the lexical finite verb. The explanation given by the authors for this finding is that the difficulty of the language impaired groups in fronting the verb, lies in a deficit in lexical retrieval. This is a suggestion already put forward by Bastiaanse and Bol (2001), who investigated the relationship between verb inflection and verb diversity in agrammatic speakers, SLI children and TD children. In that study, the two language impaired groups showed a low proportion of finite verbs and produced a low diversity of verbs. In the light of this finding, they proposed that there may be a disorder at the level where lexical-semantic items and syntactic structures are integrated.

These contradictory findings of the various studies demand caution in interpreting the differences between SLI and TD children's dummy auxiliary use, and require further analysis. We will return to this issue in the discussion section of this chapter. Another question that needs to be answered, in order to better understand the role of dummy auxiliaries, is whether SLI children assign meaning to them. None of the studies mentioned above have tested the comprehension of

dummy auxiliaries. The conclusion can be drawn that an in-depth study of the use and meaning of dummy auxiliaries by SLI children is needed.

The aim of this study is to contribute to our understanding of what the source and role of dummy auxiliaries is in the acquisition of finiteness (verb inflection and verb placement) in Dutch by L1 and early L2 children[51] with SLI.

5.1.2. Markers of temporality

Grammatical morphemes and auxiliaries often express tense and aspect, two notions that can be subsumed under the concept of temporality. Relevant markers of temporality in the languages involved (Dutch, Moroccan Arabic, Tarifiyt and Turkish) are presented in Table 1-2. The following aspectual distinctions are considered: prospective, imperfective, perfect and perfective. The four languages differ considerably in the ways they express aspect. Turkish uses mainly synthetic forms, whereas the other three languages often make use of analytic forms. Furthermore, while Dutch, Moroccan-Arabic and Turkish have only one form of expressing prospective aspect, Tarifiyt has three options. As for the expression of imperfective aspect, Dutch has multiple ways of expressing this, whereas the other three languages have only one. In Tarifiyt and Moroccan-Arabic, perfect and perfective aspects are each expressed with a different form, whereas Turkish has only one form for both aspects. Dutch has two forms of expressing perfective aspect, one of them being the same as the form used to express perfect aspect.

Studies on the acquisition of tense and aspect morphology have shown that particular grammatical morphemes expressing tense and/or aspect never occur with certain verb classes. Brown (1973) and Bloom et al. (1980) found that the progressive aspect marker *–ing* never overgeneralizes to stative verbs and that children use past tense morphology with a small group of punctual and completive verbs such as *fell*, *broke*, *dropped* and *found*. A similar link between tense-aspect marking and inherent temporal features (i.e. lexical aspect) has also been found in

[51] There is no clear consensus as to when a child can be considered an 'early second language learner'. We consider early L2 learners, children whose first systematic exposure to Dutch as a second language started around the age of 2;6 years, an age at which most children in the Netherlands start attending preschool. Researchers such as Tracy and Thoma (2009) define early L2 learners as children at the ages of three to five, considering this the point in time when their L1 grammar is already well in place. Gathercole, Thomas, Roberts, Hughes and Hughes (2013) define early L2 learners as children who start acquiring the second language during the preschool years, by 5 years of age or at least during the early school years.

other languages such as French (Bronckart and Sinclair, 1973), Italian (Antinucci and Miller, 1976) and Turkish (Aksu-Koç, 1988). In an earlier study, Julien et al. (chapter 2) found that stative verbs indicating internal states seldom occur with dummy auxiliaries and are used as finite verbs in initial (V1 or V2) position as early as 2;03 years of age. This finding corroborates those of researchers such as Jordens (1990), Schlichting (1996), and Wijnen (1995b) who commonly agree that early finite verbs (in V1 or V2 position) are statives rather than eventives. In their study Julien et al. (chapter 2) also observed that stative verbs that express an external state, such as the verbs *zitten* ('sit'), *staan* ('stand'), *liggen* ('lie') may occur with dummy auxiliaries, but the verbs that occur most frequently with dummy auxiliaries are action verbs. Research on L2 acquisition reports associations between lexical aspect and tense-aspect morphology like those discussed in L1 acquisition research (Andersen 1991; Bardovi-Harlig and Reynolds 1995).

The verb classes used in this study are based on Vendler's (1957) four-way distinction of verbal aspectual features. When expressing perfect aspect, most Dutch verbs select the auxiliary *hebben* ('have'), but with unaccusatives and ergatives the auxiliary *zijn* ('be') is used. Within the first group of verbs selecting *hebben,* two verb classes can be discerned: statives and action verbs. Statives typically cannot be used with a continuous aspect (so are not allowed in the '*aan het*+INF' construction). The second group, selecting *zijn,* consists of verbs describing a change of state (without mentioning an agent) or a movement with a clear endpoint: verbs like *breken* ('break'), *veranderen* ('change'), *komen* ('come'), *rijden* 'drive'). When verbs of motion do not show a clear endpoint, the auxiliary *hebben* is used.

5.1.3. Research questions

In order to address the global query into the role of dummy auxiliaries in the acquisition of finiteness (verb inflection and verb placement) in Dutch by L1 and early L2 SLI children, and in order to test the hypotheses that dummy auxiliaries are devoid of meaning and an economical alternative for movement of the lexical verb (e.g., Blom and De Korte, 2011; De Jong et al., 2013), and a step towards the acquisition of finiteness in Dutch (Van de Craats, 2009), we have formulated the following research questions:

1. Do L1 and L2 SLI children acquiring Dutch use dummy auxiliaries?
   Since dummy auxiliaries have often been identified in the language varieties of Dutch learners (see 1. General Introduction) we predict that they will be found in the production data of the children investigated in the present study.

2. Do SLI children acquiring Dutch assign meaning to the construction *zijn* ('be') / *gaan* ('go') + INF ?
   The prediction is that the youngest bilingual children in the present study, being in a less advanced stage of acquisition of Dutch than the other groups, will assign a default, 'null' reading to both auxiliaries, and associate both auxiliaries with the pictures depicting ongoing events. Children in more advanced stages of their language acquisition will gradually assign prospective meaning to the construction *gaan*+INF. This prediction is based on studies by Zuckerman (2001; 2013), Verhagen (2013) and Julien et al. (chapter 3), Julien et al. (chapter 4), who came to the conclusion that monolingual children and Moroccan adult DAL learners, in early stages of their acquisition of Dutch, ascribe present-tense meaning (Zuckerman and Verhagen) or no meaning (Julien et al.), rather than prospective or perfect meaning to the auxiliary *gaan* and the dummy auxiliary *zijn*.

3. Does length of exposure to Dutch influence the use and choice of dummy auxiliary?
   Previous research has shown that TD children and adult DAL learners, at the initial stage of language acquisition, use very few dummy auxiliaries, and that these increase as the acquisition process advances. In the next stage, dummy auxiliaries decrease while finite lexical verbs in V2 increase (Blom and De Korte, 2011; Julien et al., chapter 2; Van de Craats and Van Hout, 2010; Verhagen, 2009). As for SLI children, the findings of previous studies are contradictory. While in Orgassa's study (2009) the use of dummy auxiliary verbs by SLI children decreased with age and length of exposure (eight year-olds produced significantly less dummy auxiliaries than six year-olds), Zwitserlood's study (2015) revealed that the percentages of dummy verbs did not change significantly between the ages 6 and 8. In the light of these findings, no prediction will be made regarding the rates of dummy auxiliary use.

Regarding the choice of dummy auxiliaries, Julien et al. (chapter 3) and Julien et al. (chapter 4) have shown that monolingual children acquiring Dutch and adult DAL learners use the dummy *zijn* ('be') in the first period of their language acquisition. Use of the dummy *zijn* is short lived. As learners progress in their language development, this dummy almost disappears as they start favouring the dummy *gaan* ('go'). Based on this finding, it is predicted that the very young bilingual children in the present study will use the dummy *zijn* more than the other groups of children, and that the latter will use the dummy *gaan* more.

4. Does language background influence the comprehension and choice of dummy auxiliary?
   Van de Craats and Van Hout (2010) have put forward the hypothesis that the dummy *gaan,* observed in the language variety of Moroccan Arabic learners, could be the result of interference from L1 Moroccan Arabic, since that language has a real auxiliary (ġadi/ġa+IMPRF) which is, regarding form and meaning, very similar to the auxiliary *gaan* in Dutch. In an earlier study, Van de Craats (2009) observed that Turkish adult DAL learners mainly use the dummy auxiliary *zijn.* Dummy *zijn* is assumed by Julien et al. (chapter 3), by Van de Craats (2009), and by Verhagen (2013) to originate from the Dutch language itself, under the influence of the extensively used copula *zijn*. However, studies on child Dutch language acquisition point to the absence of differences among groups with diverse language backgrounds (Blom and de Korte, 2011; Hulk and Cornips, 2005; De Jong et al., 2013, Orgassa, 2009; Julien et al., chapter 4). On the basis of these findings, it is predicted that the choice of dummy auxiliaries will not differ significantly among the four language groups of participants in the present study. It is also predicted that Moroccan Arabic speakers will rapidly abandon the dummy *gaan* in favour of its correct prospective use, given the similarities between the two languages. This will be reflected in a reduced frequency of the dummy *gaan* in the data of the older Moroccan Arabic speaking children.

5. Does the use of dummy auxiliaries increase as morphosyntactic demands increase?
   An affirmative answer would provide evidence that L1 and L2 SLI children use dummies to avoid inflectional and/or syntactic complexity. That seems to be the case in child second language acquisition (TD), as suggested by the studies of Blom and De Korte (2011) and Julien et al. (chapter 4) in which they showed

that the number of dummy auxiliaries used increased as the number of syntactic steps required to get to the subject-verb inversion (XVS) increased[52]. Given that the participants in the present study are of approximately the same age and have had a similar LoE to Dutch as those in the mentioned studies, the prediction is that the younger bilingual children will produce more dummy auxiliaries with sentences requiring inversion than the monolingual and the older bilingual children. In fact, this is what De Jong et al.'s (2013) study on bilingual SLI children showed: an increase in dummy auxiliary use as syntactic complexity increased. That morphological complexity leads to errors has been shown in studies such as that of Paradis, Nicoladis, and Crago (2007), who noted that early L2 learners of English and French produced more errors with irregular past tense forms than with regular ones, and that of Rispens and De Bree (2014), who found that young Dutch-speaking TD children performed worse than older children on past tense irregular verbs than on regular verbs. The results of Blom and Paradis (2013) and Jacobson and Schwartz (2005) corroborate these findings. Errors with irregular verbs differed across TD L2 and SLI L2 learners of English. Overregularization (*catched* instead of *caught*) was relatively frequent in children with TD, whereas SLI children often failed to use any tense marking expression with irregular verbs. Also, monolingual Dutch speaking SLI children have been shown to produce fewer past tense forms and more errors when compared to younger TD children (De Jong, 1999). In that study, the SLI children frequently used dummy auxiliaries combined with infinitives. De Jong suggested that a past tense dummy auxiliary functions as an early past tense carrier, and that dummy auxiliaries are a 'strategy' to avoid movement and inflection of the main verb.

Another special verb category, regarding morphosyntactic demands, are the particle verbs, the reason being that, when moving upwards, the lexical verb is separated from the particle, which remains in sentence-final position (see Dehé, 2012 for a discussion of morphosyntactic properties of particle verbs in

[52] According to the more traditional analysis, main clauses with and without inversion do not differ in derivational complexity, because movement is invariable from V (head-final position) to C. A more recent minimalist proposal with a strict head-initial structure holds that movement to C is variable (Zwart, 1997). Assuming that I is split into Agreement (AGR) and Tense (TNS), it is argued that the verb moves up to C, via left-headed AGR and TNS only in main clauses when the specifier position of CP is filled by another syntactic element than the subject (which remains in Spec,I/AGR). In main clauses without inversion the subject remains below C, namely in Spec,I/AGR and the verb in AGR head.

Germanic languages). Separating the verb from the particle may put an extra load on learners' processing capacities, leading to less accuracy, and to the use of dummy auxiliaries to avoid those difficulties. In fact, an earlier study of Julien et al. (chapter 4) on the use of dummy auxiliaries by TD developing L1 and L2 children showed that particle verbs elicited more dummy auxiliaries than other verb types.

Based on earlier studies, we distinguished three verb types in the present study: (1) regular verbs, (2) irregular verbs and (3) particle verbs. It is hypothesized that children will produce fewer errors in the present tense than in the past tense condition. In the past tense condition, irregular verbs will lead to more errors and more dummy auxiliary use than regular verbs. In addition, given that particle verbs are morphologically and syntactically more complex than regular and irregular verbs, it is hypothesized that children will have even more difficulty with those verbs.

6. Does verb class have an effect on the use of dummy auxiliaries?
   In an earlier corpus study, Julien et al. (chapter 2) observed that monolingual children aged 1;6 to 3;6, produced internal state verbs in their finite form in initial position before other verb classes. With other verb classes they used the periphrastic construction AUX+INF. These findings corroborated those of Jordens (1990). In a later experimental study, Julien et al. (chapter 4) showed that dummy auxiliaries were used much less with stative verbs than with other verb classes. No significant differences were found among the other verb classes. The prediction is then, that the children in the present study will use a few or no dummy auxiliaries with stative verbs and more with other verb classes.

The outline of the chapter is as follows. The next section (2) presents the experimental framework and the methods for the data collection and analysis. This is followed by the presentation of the results of the study (3). The final sections discuss the main findings (4) and present concluding remarks (5).

5.2. Method

5.2.1. Participants

The participants were 74 children growing up in the Netherlands, 42 of them acquiring Dutch as a first and 32 as a second language. The bilingual children spoke Moroccan Arabic, Tarifiyt, or Turkish as their L1. There were 50 boys and 24 girls. Most participants, ranging in age from 4;1 to 9;7, had attended preschool[53] from the age of 2;6 onwards, before entering primary school at the age of four.

The fact that the bilingual children's systematic exposure to Dutch generally starts after 2;6 years of age, implies that, at the time of the experiment, they had been less exposed to Dutch than the monolingual children. The length of exposure (LoE) to Dutch the children had had at the time of the experiment varied from 4;1 to 8;6 (monolinguals) and from 2;6 to 7;2 years (bilinguals).

The children were recruited in cities of the Randstad (the metropolitan region in the western part of the Netherlands), and in cities in the eastern part of the Netherlands. Their most relevant characteristics are given in Table 5-1.

Table 5-1. Most relevant learner characteristics of the six age groups; Age range in months (min-max); Mean and SD (standard deviation)

	Monolingual			Bilingual		
	Very young	Young	Old	Very young	Young	Old
Age range in months	50-66	68-90	92-104	60-68	72-93	98-117
Age mean (SD)	59.8 (5.49)	79.5 (7.96)	96.5 (4.17)	63.4 (2.76)	80.4 (5.05)	107.0 (5.73)
Languages (N)	Dutch (17)	Dutch (17)	Dutch (8)	Tarifiyt-Dutch (1)	Tarifiyt-Dutch (5)	Tarifiyt-Dutch (2)
				Arabic-Dutch (1)	Arabic-Dutch (3)	Arabic-Dutch (3)
				Turkish-Dutch (5)	Turkish-Dutch (7)	Turkish-Dutch (5)
Total	17	17	8	7	15	10

Selection criteria

The following SLI criteria, used nationally and equivalent to the international

[53] Generally, children in the Netherlands attend preschool two to three times a week for approximately three hours each time. There, the language of communication is Dutch. In the last decade, special programmes are used, aimed at stimulating the acquisition of that language.

exclusionary criteria for the diagnosis of SLI, were used to select the participants: (i) they had to have been diagnosed with SLI by a multidisciplinary team; (ii) their test scores had to be -1.25 standard deviations below the age-normed average (or worse) in two language tests; (iii) their non-verbal IQ score had to be equal or higher than 85; (iv) they could not be hearing impaired; (v) they should not have had episodes of otitis media with effusion nor recurrent hearing problems in the six months prior to taking part in this study; (vi) they should have no behaviour problems such as autism or extreme forms of ADHD, and (vii) no signs or treatment of seizure disorders, cerebral palsy, and brain lesions. Besides these exclusionary criteria, bilingual children must have been diagnosed as having SLI on the basis of their language level in both languages, as established by qualified speech therapists and clinical linguists. However, instruments to measure both languages are scarce. One monolingual instrument, the TAK (Verhoeven and Vermeer, 2002), is regularly used as part of the diagnosis and the admission procedure to special schools for language and speech disorders; this standardized test has norms not only for Dutch monolingual children, but also, at the time of the making of the test, for children belonging to the three largest immigrant populations in the Netherlands, namely Moroccan, Surinamese, and Turkish. Often, the test scores were supplemented with other languages tests and analyses of a sample of spontaneous language in both languages.

The criteria used to control for the language background of the children was that (i) both parents or carers of the monolingual children were native speakers of standard Dutch; (ii) the parents or carers of the bilingual children were speakers of Turkish, Tarifiyt or Moroccan-Arabic; (iii) the bilingual children's systematic exposure to Dutch had started around or after the age of 2;6 years. In order to gather this background information on the children's linguistic situation, a modified version of the parental questionnaires *Anamnese meertaligheid* ('Anamnesis multilingualism') and *Anamnese taalaanbod* ('Anamnesis language input') taken respectively from Blumenthal and Julien (2000) and Julien (2008) was used.

5.2.2. Elicitation tasks

One comprehension and three production experiments were administered to the participants. They are displayed in Table 5-2.[54]
This set of experiments, all of them aimed at eliciting a lexical verb in the third person singular, was designed not only for monolingual and bilingual TD children acquiring Dutch, but also for SLI children (both monolingual and bilingual) and adult DAL learners.

Table 5-2. Overview of the experiments in this study

Experiment	Type of task	Mode	N of items
1	Multiple choice (meaning interpretation)	Comprehension	
	(a) prospective		19
	(b) imperfective		18
	(c) dummy		19
2	Narrative (meaning)	Production	
	(a) prospective		16
	(b) imperfective		16
	(c) perfect		16
3	Completion syntax	Production	
	(a) no-inversion order (SV)		23
	(b) inversion order (XVS)		24
4	Completion morphology	Production	
	(a) present tense		34
	(b) past tense		34

Both the multiple choice Comprehension task, with 56 items, and the Narrative task, with 48 items, were designed to test whether aspectual meaning is involved in the constructions *zijn*+INF and *gaan*+INF. The tasks consisted of watching film clips, each followed by three pictures extracted from the film in question, which were presented on the screen immediately after the film. The first picture showed the image one fraction before the beginning of an action or state, the second picture showed the action or state itself and the third picture showed the end of the action/state.

The Syntax task was designed to answer the question whether the number of dummy auxiliaries produced increases as syntactical complexity increases. This

[54] The comprehension experiment consists of 60 items, four of which were used as distractors and put in a fourth condition with the construction *zijn/hebben*+PPART. This condition was not involved in the analyses reported in the next section. One item was removed from the syntax task in the no-inversion order because it elicited a plural form.

experiment comprises a total of 47 items; 23 items to test the no-inversion order, which does not require verb and subject inversion, and 24 items to test the inversion order.

The sentence completion Morphology task, with the 'Present and Past tense' conditions, each containing 34 items, was designed to investigate the relationship between morphological skills (inflection) and the use of dummy auxiliaries.

5.2.3. Group comparisons

Six groups of children (see Table 5-1) were compared with each other. A three by two factorial design was adopted, one factor (age) consisting of three levels (very young children, young children and older children) and the other factor ($^{mono}/_{bi}$lingualism) consisting of two levels (monolingual and bilingual).

In order to account for the difference in exposure between monolingual and bilingual children (see 5.2.1), the age groups mentioned in Table 5-1 were created, to allow comparisons on the basis of length of exposure (LoE) rather than only on the basis of age. Hence, the comparison of young bilingual children aged 72-93 months (Y-bilingual) with very young monolingual children aged 50-66 months (VY-monolingual) and between older bilingual children aged 98-117 months (O-bilingual) and young monolinguals (Y-monolingual) aged 68-90 months permit the attribution of significant differences between the groups to $^{mono}/_{bi}$lingualism, since length of exposure (LoE) is maintained constant.

We are aware that, in making such comparisons, there are confounding variables that are not easy to control for, such as the amount and quality of exposure and mental age. The amount and quality of exposure to Dutch is difficult to measure, particularly in the bilingual group. Moreover, the bilingual group is older than the monolingual group, and therefore cognitively more mature. Nevertheless, the young monolingual children provide a better match to the bilingual children in terms of LoE to Dutch than age-matched monolingual TD children would be. This procedure is considered justifiable and has been adopted in other studies (de Jong et al., 2013; Gathercole, 2013; Orgassa, 2009).

In addition, this grouping allowed for the investigation of the pattern of language development the children follow within the two language groups. Hence, within the bilingual group, the VY-bilinguals (60-68 months) were compared to the Y-bilinguals (72-93 months) who in turn were compared with the O-bilinguals (98-117 months). Within the monolingual group comparisons are made among VY-

monolinguals (50-66 months), Y-monolinguals (68-90 months) and O-monolinguals (92-104 months).

5.2.4. Materials

The verbs used in the experiments were selected based on frequency, age of acquisition and amount of exposure to Dutch (Bacchini, Hulsbeek, and Smits, 2005; Gathier and de Kruyf, 2005; Schlichting and De Koning, 1998; Zink and Lejaegere, 2002) and were grouped on the basis of *verb class* (lexical aspect) and *verb type*, i.e. morphological characteristics such as regularity and presence of a verbal particle (see appendix 1).

Short clips and pictures were taken from the television series Pingu. The programme DVDx 4.0 was used to rip the DVD *Pingu voor altijd* (*Pingu Forever*) (The Pygos Group and Hit Entertainment Limited, 2010). At a later stage, clips were made out of the converted DVD using the programme Virtual Dub 1.9.

The series of Pingu films was chosen due to its appeal to different age ranges. Their simplicity and transparency ensured that the participants could easily understand the films. Moreover, the fact that the children lacked any reference to a specific spoken language eliminated any bias towards one of the languages spoken by de participants.

5.2.5. Procedures

The children were tested individually. The tasks were presented to them on a laptop using the software programme E-prime 2.0 (Schneider, Eschman and Zuccolotto, 2001). Depending on the task, each participant was instructed to match a picture with a stimulus utterance, which they heard via the laptop's loudspeaker, or to describe an event on a film clip and/or an action depicted in a picture, or a picture sequence, presented to them on the computer screen. The E-prime programme enabled not only a randomisation of the test items in the experiments, but also recording the participants' responses. In the language comprehension task the E-prime's function of recording response accuracy was used. The choice of the picture depicting an ongoing action was defined as accurate not only when it corresponded to the correct construction with the finite verb, but also to the dummy construction *zijn*+INF (see footnote 55).

All the utterances produced by the participants were orthographically transcribed. Transcription conventions used were taken from the transcription

system of CHAT (Codes for the Human Analysis of Transcripts) (MacWhinney, 2000). A coding system consisting of ten categories was designed for all production experiments. Each category represents a certain type of construction and its variants. We analysed the data using the software programmes Microsoft Excel 2007 and IBM SPSS 21.

5.3. Results

In the next five subsections the results will be presented in the following order for each experiment: (i) target and most frequent non-target responses (for a description of what is considered the target, see footnotes 10, 11, 14 and 16), and (ii) occurrence of dummy auxiliaries. In section 3.7 we will deal with individual patterns in the use of dummy auxiliaries.

Repeated measures ANOVAs were performed on the outcomes of each experiment to explore whether:

- the three age groups of monolingual and bilingual children (very young, young and older) differ from each other regarding the accuracy of responses (target) and, in the production tasks, regarding their use of dummy auxiliaries;
- being monolingual or bilingual affects target scores, and in the production tasks, the use of dummy auxiliaries;
- verb type has an effect on target scores and on the use of dummy auxiliaries in the two completion tasks.

We investigated the distinction between regular verbs, irregular verbs and particle verbs in the two completion tasks. The verbs in the Comprehension and Narrative tasks were not classified according to their type. An α level of .05 was adopted. Degrees of freedom were Huynh-Feldt corrected for the within subjects effects.

The statistical analyses on the effects of verb classes did not provide a clear, interpretable picture on accuracy or dummy auxiliary use. Though a tendency could be observed, in some of the conditions, for some statives to elicit high target scores and low numbers of auxiliaries, there is no sound evidence for an effect of verb class. We consequently decided not to report the results on the effects of verb class.

5.3.1. Comprehension experiment

Reliability tests were carried out to measure the internal consistency of the items that this experiment comprises. In the *gaan*+INF condition, with the prospective meaning as target[55], the reliability of the items is high (Cronbach's α=.846). There were three deviant items. Deleting those items would not change the alpha level, so they were kept in the experiment. In the present tense condition, with the imperfective meaning as target, the reliability was α=.735. There were no deviant items. In the *zijn*+INF condition, also with the imperfective meaning as target (see footnote 10), the reliability of the items was α=.743 and there were no deviant items either.

Target and non-target responses

Figure 5-1 shows the mean proportions of target responses and their error bars (+/-2SE) in the three conditions split out for the six groups of children.

In Figure 5-1 it can be seen that the percentages of target responses in the dummy *zijn*+INF and imperfective conditions range between around 80% and 90%. In the *gaan*+INF condition, however, the response accuracy is much lower for all groups, ranging from approximately 15% for the very young children to approximately 40% for the older children. It is notable that when failing to choose the target (the first) picture upon hearing the construction *gaan*+INF, all groups mainly chose the second picture.

[55] The choice of a picture was considered target when Picture 1 corresponded to the stimulus sentences with the construction *gaan*+INF, Picture 2 matched the sentences with the finite verb in the present tense. For the purpose of simplifying the task and facilitating the analysis, the incorrect sentences with the dummy construction *zijn*+ INF were also ascribed the status 'target' when matched to Picture 2. Picture 3 corresponded to the distractors, that is, sentences with the construction *zijn/hebben* + past participle.

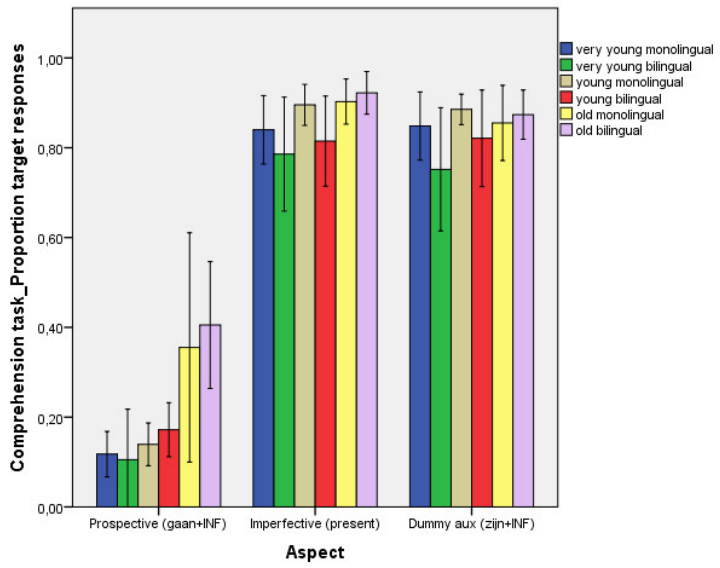

Figure 5-1. Mean proportions of target responses and error bars (+/- 2*SE*) for the six participant groups in the conditions *gaan*+INF, present tense and *zijn*+INF

The ANOVA on target responses shows a significant main effect of age, $F(2, 68) = 11.817$, $p = .000$, $\eta_p^2 = .258$. There is no significant main effect of being monolingual or bilingual (henceforth $^{mono/}_{bi}$lingualism), $F(1, 68) = .718$, $p = .400$, $\eta_p^2 = .100$, and no significant interaction effect between age and $^{mono/}_{bi}$lingualism, $F(2, 68) = 1.218$, $p = .302$, $\eta_p^2 = .035$.

The tests of within-subjects effects reveal a significant main effect of aspect, $F(1.360, 92.498) = 376.015$, $p = .000$, $\eta_p^2 = .847$, and a significant interaction effect between aspect and age, $F(2.721, 92.498) = 3.860$, $p = .014$, $\eta_p^2 = .102$. There is no significant interaction effect between aspect and $^{mono}/_{bi}$lingualism, $F(1.360, 92.498) = .947$, $p = .360$, $\eta_p^2 = .014$, and no significant interaction effect among aspect, age and $^{mono}/_{bi}$lingualism, $F(2.721, 92.498) = .194$, $p = .884$, $\eta_p^2 = .006$.

Pairwise comparisons (LSD) show significant differences between the conditions *gaan*+INF and present tense (p=.000), *gaan*+INF and *zijn*+INF (p=.000) and present and *zijn*+INF (p=.035).

A separate analysis shows that the effect of age existed in the condition *gaan*+INF, F (2, 71) = 14.750, p =.000, η_p^2=.294. In the *present tense* and the *zijn*+INF conditions the ANOVAs yielded no significant main effects of age (respectively, F (2, 71) = 2.119, p =.128, η_p^2=.056 and F (2, 71) = .353, p =.704, η_p^2=.010). Post-hoc (HSD) comparisons in the condition *gaan*+INF reveal a significant difference between the very young and older children (p=.000) and the young and the older children (p=.000). The very young and young children do not differ significantly from each other (p=.650).

Because the error bars in Figure 5-1 indicate large differences among the participants, boxplots were drawn in order to study the distributional characteristics of the scores and identify outliers. They are shown in Figure 5-2.

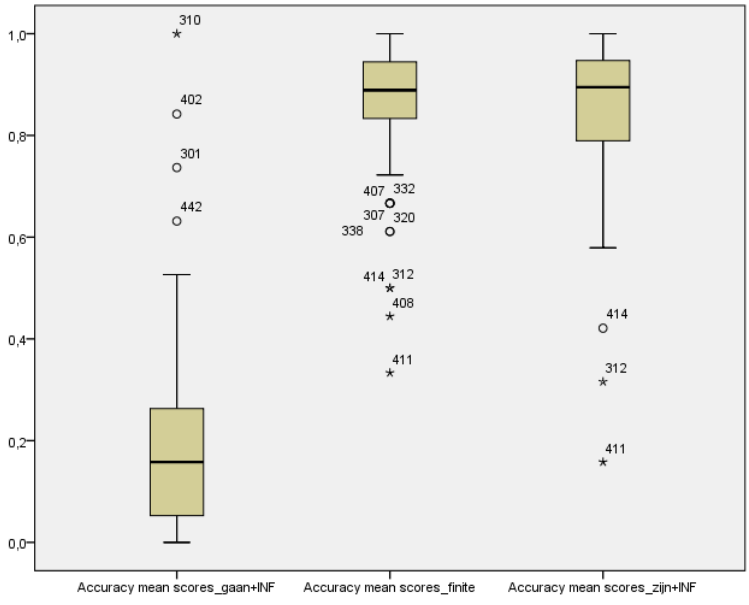

Figure 5-2. Distributional characteristics of the scores in the comprehension task.

In the prospective condition all outliers were older than 8 years of age. One of them, an 8;0 year-old monolingual, was an extreme outlier. The other three outliers were a monolingual 8;8 year-old and two bilinguals: a Turkish speaking 8;2 year-old, and an Arabic speaking 9;9 year-old. Although the boxplot is situated on the lower part

of the graph, indicating a limited understanding of the construction *gaan*+INF by the majority of the participants, the long bar on the upper side of the box suggests that not only did these four children understand the prospective meaning of that construction, but a few other participants seemed to begin to understand it.

The normal skewness of the present tense condition and the boxplot on the upper part of the graph indicate that most children consistently associated the present tense with the picture depicting ongoingness. There are, however, nine outliers: five monolinguals and four bilinguals. The age range of the monolingual children was 5;1 to 7;1 years, and of the bilinguals, all Turkish speaking, 5;3 to 6;1 years. Three of the four extreme outliers were bilingual. These bilingual extreme outliers, and a monolingual moderate outlier, mainly chose the third picture, depicting perfect aspect, when failing to choose the second picture upon hearing the lexical verb in the present tense. The other outliers, including the monolingual extreme outlier, mostly chose the third picture, but also the first when failing to choose the second picture.

In the *zijn*+INF condition there were three outliers, two of which being extreme: a monolingual and a Turkish-speaking bilingual. The outliers in this condition were between ages five and six. The negatively skewed boxplot indicates that the data are more spread out in that section, meaning more variation among the participants. Note that the three outliers in this condition were also extreme outliers in the present tense condition. These three participants seemed to randomly choose the pictures since they did not have a preference for the one or the other.

To sum up, the understanding of *gaan*+INF improved with length of exposure, but remained limited in all groups. The low percentages of target responses, not exceeding 40%, suggest that the prospective meaning of the construction *gaan*+INF takes a long time to acquire. Also worth noting is the fact that the outliers (on the upper side of the bar) in the prospective condition were older than 8 years, showing a clear effect of length of exposure. The outliers (on the lower side of the bar) in the other two conditions were younger, indicating that some younger children are still struggling with the meaning of the present tense and, also do not associate *zijn*+INF with the second picture as most of the other children do.

It is notable that most participants showed no hesitation in choosing the picture where the action is portrayed, when hearing each of the three constructions. In fact, they seemed to disregard the grammatical construction they heard, and focus solely on the content of the verb. The following, not uncommon, examples (3) to (5) support this idea.

In example (3), Ayman, a 6;10 year-old bilingual, heard the utterance **Pingu is de zeehond zien* (Pingu be.3SG the seal see.INF), and pointed to the picture depicting the action taking place while saying:

(3)	*'Pingu*	*ZIET*	*de zeehond!'*
	Pingu	SEE.PRES.3SG	the seal!

Despite focussing on the meaning of the verb and choosing the picture where the action was clearly portrayed, Ayman showed that he perceived the construction *zijn*+INF as incorrect. He corrected it while putting emphasis on the finite verb form *ziet* ('see'.3SG), which clearly shows that he did not ascribe perfect meaning to that construction.

A similar example was produced by a 7;6 year-old monolingual upon hearing the stimulus utterance *De vogel is vliegen* (the bird be.3SG fly.INF). He said:

(4)	*'De vogel*	*IS VLIEGEN* ?	*IS VLIEGEN*...?	*Dat kan niet*.'
	The bird	be.3SG fly.INF?	be.3SG fly.INF…?	That is not possible.

Notwithstanding, he chose the second picture without hesitation. His choice in the rest of the stimulus utterances with the constructions *zijn*+INF, *gaan*+INF and the finite verb was invariably and without hesitation, the second picture.

Example (5) shows the reaction of a nine year-old bilingual who often hesitated between picture 1 (portraying prospective aspect) and picture 2 (portraying the ongoing action) upon hearing an utterance with the construction *gaan*+INF. Despite hesitating, he almost always chose the second picture except for one occasion, when he chose the first picture after saying:

(5)	Child:	*Gaat, toch*? ('Go.3SG, right?')
	Tester:	Ja ('yes')
	Child:	*Dan is het deze* ('Than it is this one.')

This reaction shows that this child had some notion that *gaan*+INF expresses prospective aspect.

5.3.2. Narrative experiment

A reliability analysis gives high Cronbach's alphas for the items in all three conditions: prospective α = .879, imperfective α = .903, and perfect α = .904. These relatively high values show that the tests were internally consistent with respect to target responses and that we may use the sum of the target responses as an indicator for the test performance of the participants.

Target and non-target responses

Figure 5-3 shows the mean proportions of target responses and error bars (+/- 2SE) in the three conditions, split among the six groups of children[56].

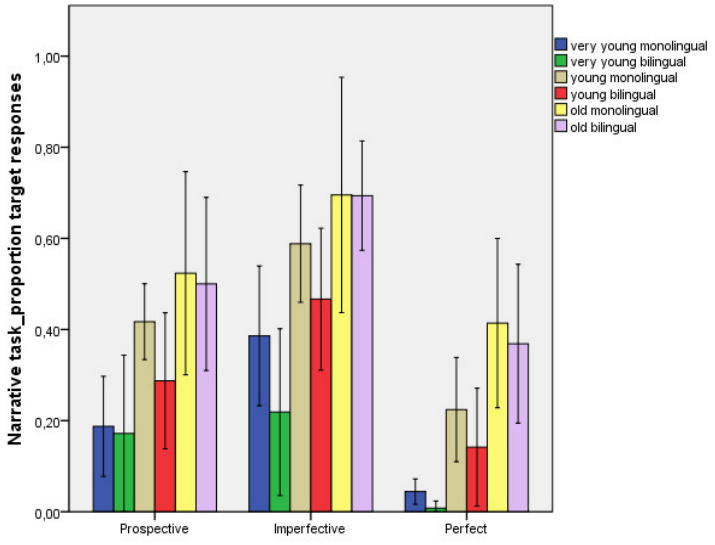

Figure 5-3. Mean proportions of target responses with error bars (+/- 2*SE*) in the conditions prospective, imperfective and perfect of the Narrative task, split among the six groups of children

[56] A response was considered target if all the criteria were met: 1.the target verb was used, 2. the finite verb was congruent with the subject, 3. One of these constructions was used: first picture: *gaan* ('go')+INF, *wil* ('want')+INF, *wil* ('want')+*gaan* ('go')+INF and *moeten* (must)+INF; second picture: finite (present and past tenses), *zijn* ('be') *aan het* ('on the')/*bezig met* ('busy with')+INF, and *zitten* ('sit')/*staan* ('stand') te ('to')+INF; third picture: *zijn* ('be') / *hebben* ('have')+ PPART and *zijn* ('be') *klaar* ('ready') / *gestopt* ('stopped') *met* ('with')+INF.

The ANOVA shows a significant main effect of age, F (2, 68) = 20.817, p =.000, η_p^2=.380. There is no significant main effect of $^{mono/bi}$lingualism, F (1, 68) = 2.566, p =.114, η_p^2=.036, and no significant interaction effect between $^{mono}/_{bi}$lingualism and age, F (2, 68) =.395, p =.675, η_p^2 =.011.

The tests of the within subjects effects only show a significant main effect of aspect, F (1.654, 112.497) = 29.194, p =.000, η_p^2=.300. There are no significant interaction effects between age and aspect, F (3.309, 112.497) = .212, p =.904, η_p^2 =.006, neither between $^{mono}/_{bi}$lingualism and aspect, F (1.654, 112.497) = .145, p =.826, η_p^2=.002, nor among aspect, age and $^{mono}/_{bi}$lingualism., F (3.309, 112.497) = .264, p =.869, η_p^2=.008.

Pairwise comparisons (LSD) reveal that all conditions differ significantly from each other: prospective versus imperfective (p=.002), prospective versus perfect (p=.000) and imperfective versus perfect (p=.000).

Post-hoc comparisons (HSD) reveal that the very young children differ significantly from both the young children (p=.001) and from the older children (p=.000). The young children and the older children also differ significantly from each other (p=.002).

The error bars in Figure 5-3 indicate considerable differences among the individual learners. In order to evaluate the range of individual variation in this task, the data was plotted in boxplots which are shown in Figure 5-4.

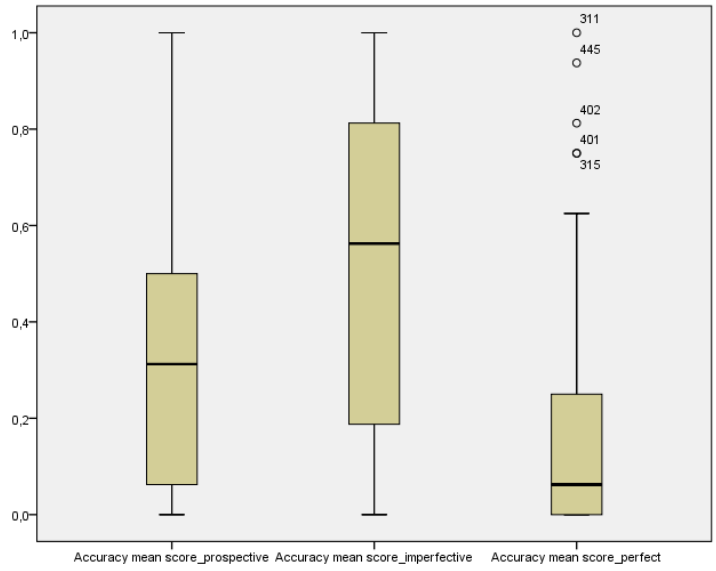

Figure 5-4. Distributional characteristics of the target scores in the Narrative task

All boxplots shown here are relatively long. This confirms that the variability among the participants is indeed large.

In the prospective condition the boxplot is situated in the lower part of the graph indicating limited use of the target constructions by the majority (75%) of the participants. The long upper whisker indicates that the 25% of children in the positive quartile group vary considerably. The short lower whisker indicates that the children in the lower quartile group perform very similarly.

In the imperfective condition, the boxplot is situated in the middle part of the graph, indicating that 50% of children score under the median and 50% above it. Both whiskers have approximately the same size, which means that variation among the children on the upper and the lower quartile is similar.

In the perfect condition, the boxplot on the right part of the graph indicates that only a low percentage of children use the target constructions to express perfect aspect. The size of the whiskers is uneven, with the long upper whisker indicating great variation among those 25% of the children and the lower whisker indicating almost no variation among the 25% of children in that quartile. In this condition there were five outliers on the upper part of the boxplot, all of them older than six years of age. Two of them were monolingual, aged 7;11 years and 7;3 years and three were bilingual: two Dutch/Turkish-speakers, aged 8;7 and 8;2 years, and one Dutch/Arabic-speaker, aged 6;9 years. All these five outliers produced between 12

and 16 out of 16 correct responses. No outliers were found in the prospective and imperfective conditions.

For a complete picture of how these children progressed in their acquisition of finiteness, not only with the target, but also the three most frequently produced non-target constructions, see Table 5-3.

Regarding the target constructions, Table 5-3 shows that, in the prospective condition, all groups except the older monolinguals use *gaan*+INF more frequently than the construction with a modal. The older monolinguals show a clear preference for the use of a modal+INF to express prospective aspect.

In the imperfective condition, the present tense is the most often used construction by all groups, and there is a clear increase in the percentages of this construction as the children grow older. The percentages within each age group do not differ much between monolinguals and bilinguals.

In the perfect condition, there is a clear increase in the use of the construction AUX+PPART, particularly with the verb *hebben* ('have'), as children get older. Note that, the VY-bilinguals do not yet use this construction. It is also evident that the construction *zijn*+ klaar met +INF is extensively used by the older children, in particular the older monolinguals, whereas the younger children seldom use it.

Concerning the non-target constructions used, Table 5-3 shows that the most frequent error produced in the prospective condition by all groups of children, except the VY-bilinguals, is the use of the present tense. The VY-bilinguals distinguish themselves in both the prospective and the imperfect condition by using in both conditions high percentages of *gaan*+INF[57].

[57] In the prospective condition, the construction *gaan*+INF is grammatically correct, as are the present and the past tenses, in the imperfective condition. The reason why they are considered incorrect is that a percentage of the utterances with these structures was produced with a verb other than the target verb.

Table 5-3. Narrative task: target and non-target constructions (percentages based on the total of the different constructions) produced in the three conditions split out for the three groups of children.

	Very young		Young		Old	
	Mono-lingual	Bilingual	Mono-lingual	Bilingual	Mono-lingual	Bilingual
Target						
Prospective	gaan+INF 17.0%	gaan+INF 14.8%	gaan+INF 31.7%	gaan+INF 22.5%	gaan+INF 18.0%	gaan+INF 28.7%
	modal +INF 2.2%	modal +INF 1.6%	modal +INF 8.5%	modal +INF 5.0%	modal +INF 31.3%	modal +INF 17.5%
Imperfective	present 26.8%	present 21.1%	Present 54.0%	present 45.4%	present 68.8%	present 67.5%
	zijn+PP +INF 9.9%	zijn+PP +INF 0.0%	zijn+PP +INF 3.7%	zijn+PP +INF 0.4%	zijn+PP +INF 0.8%	zijn+PP +INF 2.1%
Perfect	zijn+PP 1.1%	zijn+PP 0.8%	zijn+PP 1.5%	zijn+PP 0.4%	zijn+PP 1.6%	zijn+PP 5.0%
	hebben+PP 2.2%	hebben+PP 0.0%	hebben+PP 11.4%	hebben+PP 12.5%	hebben+PP 18.0%	hebben+PP 20.0%
	zijn +klaar met+INF 0.7%	zijn +klaar met+INF 0.0%	zijn +klaar met+INF 8.5%	zijn +klaar met+INF 1.3%	zijn +klaar met+INF 21.9%	zijn +klaar met+INF 10.6%
Non-target						
Prospective	present 14.0%	gaan+INF 35.1%	present 27.6%	present 32.5%	present 35.2%	present 27.5%
	non-finite 11.0%	present 5.5%	gaan+INF 10.7%	gaan+INF 17.1%	gaan+INF 3.9%	gaan+INF 10.7%
	gaan +INF 9.9%	non-finite 4.7%	modal +INF 3.3%	non-finite 4.6%	modal +INF 3.9%	past 1.9%
Imperfective	gaan+INF 32.0%	gaan+INF 52.4%	gaan+INF 25.0%	gaan+INF 30.8%	gaan+INF 23.4%	gaan+INF 14.4%
	non-finite 10.7%	zijn+INF 11.7%	stem 7.7%	stem 5.4%	stem 3.1%	stem 6.3%
	stem 5.1%	non-finite 5.5%	present 1.8%	present 3.8%	past 1.6%	past 1.9%
Perfect	present 14.3%	gaan+INF 14.9%	present 19.9%	present 27.9%	present 20.3%	present 20.6%
	copula zijn+adj/ adv 11.4%	copula zijn 12.5%	copula zijn+adj/ adv 15.1%	copula zijn+adj/ adv 16.3%	copula zijn+ adj/adv 11.7%	past 8.8%
	gaan+INF 11.0%	present 10.2%	gaan+INF 11.0%	gaan+INF 15.4%	hebben+PP 11.0%	hebben+PP 8.8%

In the imperfective condition, the most frequent non-target construction used by all groups is the *gaan*+INF. In this condition more variation among the groups in the error types can be observed: the VY-bilinguals still using non-finite verb forms, followed by the groups of VY-monolinguals and Y-bilinguals (who have approximately the same length of exposure to Dutch) who no longer use non-finite

forms but use the verb stem in equal percentages and followed by the older children who use the past tense. It is important to notice that the group of VY-bilinguals (those with the least exposure to Dutch) is the only group using the dummy construction *zijn*+INF in this condition. However, a thorough examination of the data reveals that it was mainly one (Tarifiyt-speaking) child who used this construction extremely often (15 times). *Zijn*+INF was used by five other bilingual children, of whom two used it only once (a 78-month-old and a 102-month old), one used it twice (a 61-month-old) and two (a 81-month-old and a 60-month-old) used it five and seven times respectively. Hence, two of the children who used this construction the most were very young bilinguals.

In the perfect condition, the present tense is the most common error for all groups except the VY-bilinguals who use *gaan*+INF more often. Among the older children, neither the monolinguals nor the bilinguals use *gaan*+INF. Instead, the O-monolinguals mainly use the AUX+PPART or the copula *zijn* plus an adjective or an adverbial signalling accomplishment, while the O-bilinguals use both the AUX+PPART and the past tense equally. This suggests that, the monolingual group is more sensitive to nuances regarding the contexts where the grammatical markers to express perfect and perfective aspect are used. It seems that the bilingual group has not yet consolidated this knowledge.

We may conclude from the above that *gaan*+INF is extensively used by all groups, the VY-bilinguals using it more often than the other groups. Another conclusion drawn from these results is that there is a great overlap in the types of errors produced by the six groups of children in each condition. Being monolingual or bilingual does not seem to have an effect on the types of errors.

Interestingly, children often accompany the verb in the present or past tense as well as the construction *gaan*+INF with lexical elements which signal the near future, such as *bijna* ('almost'), or *nog niet* ('not yet'); or *nu* ('now') to signal ongoingness; or *al* ('already') or *niet meer* ('no more'), to express perfect aspect or by fixed expressions expressing initiation *beginnen met* (start with)+INF, ongoingness *zitten/staan te* (sit/stand to)+INF or accomplishment *stoppen met* (stop with)+INF. Example (6) illustrates this.

(6) Bas, a 7;9 year-old monolingual boy, had just seen a short clip in which Pingu makes a penguin's head with clay and produces the following utterances:

Picture 1	Picture 2	Picture 3
*Hier gaat ie **nog niet** maken.*	*Maar daar **wel.** Hij gaat maken.*	*Daar **is** ie **al gestopt met** *gemaakt.*
Here go.PRES.3SG he no yet make.INF	But here surely. He go.3SG make.INF	There he has already stopped with make.PPART
'Here he does not make (it)yet.'	'But here he is already making (it).'	'There is has already stopped making (it).'

Dummy auxiliaries

Figure 5-5 shows the mean proportions of auxiliary *gaan* and error bars (+/- 2SE) in the three conditions, split out for the six groups of children.

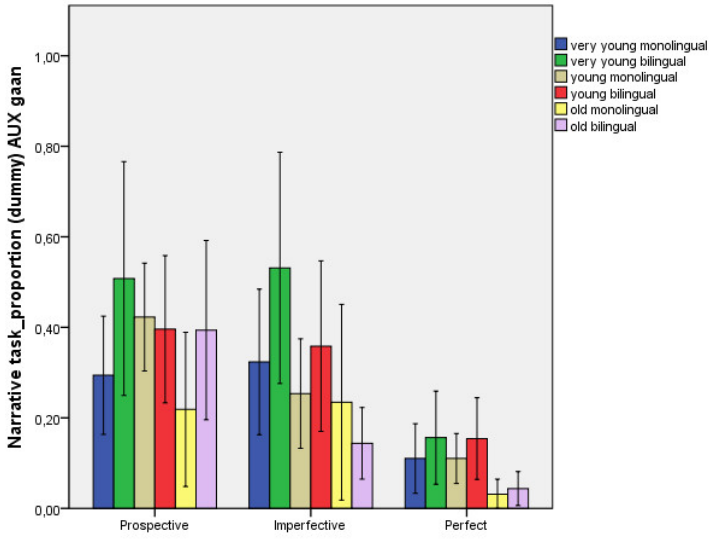

Figure 5-5. Mean proportions of dummy auxiliary *gaan* with error bars (+/- 2*SE*) in the conditions prospective, imperfective and perfect of the Narrative task, split out for the six groups of children

The long error bars in Figure 5-5 indicate considerable differences between the individual learners. In order to evaluate the range of individual variation in this task, boxplots were drawn that are shown in Figure 5-6.

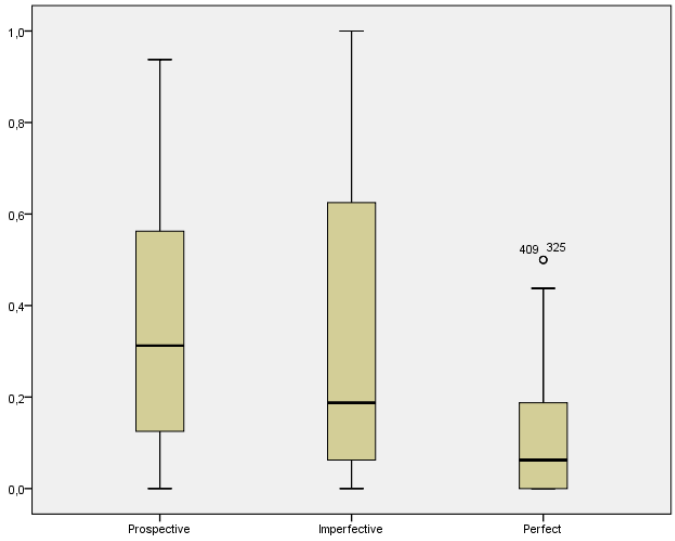

Figure 5-6. Distributional characteristics of dummy auxiliary use in the Narrative task

Figure 5-6 shows that no outliers were found in the prospective and imperfective conditions. In the prospective condition, the sizes of quartile groups 2 and 3 are almost the same, indicating an even distribution around the median. The long upper whisker indicates that 25% of children in the positive quartile group vary considerably from each other. The short lower whisker indicates that the children in the lower quartile group perform very similarly.

In the imperfective condition, the right skewness and the long upper whisker show great variation in the upper 50% of the boxplot. The short lower whisker indicates small variation in the lowest quartile group.

In the perfect condition, the boxplot in the lowest part of the graph indicates that most children do not use dummy auxiliaries in this condition. The long upper whisker shows great variation among those 25% of the children and the lower whisker indicates almost no variation among the 25% of children in the lowest quartile. There were two outliers in this condition, one monolingual (4;2 years old) and one Dutch/Turkish-speaking bilingual (6;6 years old) who used *gaan*+INF more often than the remainder of the children.

A repeated measures ANOVA was conducted to assess the effect of age and $^{mono}/_{bi}$lingualism on the use of the (dummy) auxiliary *gaan*[58]. There is no significant main effect of age, F (2, 68) = 2.233, p =.115, η_p^2=.062, nor of $^{mono}/_{bi}$lingualism, F (1, 68) = 1.958, p =.166, η_p^2=.028. There was no interaction effect between age and $^{mono}/_{bi}$lingualism, F (2, 68) =.465, p =.630, η_p^2=.013.

The tests of the within subjects effects show a significant main effect of aspect, F (2, 136) = 39.542, p<.000, η_p^2=.368. There was no interaction effect between aspect and age, F (4, 136) = 1.160, p =.331, η_p^2=.033. There was no interaction effect between aspect and $^{mono}/_{bi}$lingualism, F (2, 136) = .814, p =.445, η_p^2=.012. There was no interaction effect among aspect, age and $^{mono}/_{bi}$lingualism, F (4, 136) = 2.099, p =.084, η_p^2=.058.

Pairwise comparisons (LSD) reveal that the prospective condition does not differ significantly from the imperfective (p=.067), but it differs significantly from the perfect (p=.000). The imperfective and the perfect conditions also differ significantly from one another (p=.000).

5.3.3. Completion experiment Morphology: Present and past tense

One bilingual child did not perform the present tense task due to an error in the administration of the task. Five bilingual and 12 monolingual children did not perform the past tense task. Most of these children where five year-olds, who did not have the attention span required or did not understand the task.

Reliability analyses were carried out on the items of each condition of the completion experiment Morphology. Both analyses revealed that the items have a high reliability: Present α =.948 and past α =.890 respectively. In the present tense condition there were no deviant items, but in the past tense condition there were eight less perfect items: five irregular verbs and three particle verbs. Removing

[58] The statistical analyses of the Narrative task include only (dummy) auxiliary gaan. Because *gaan*+INF conveys prospective meaning in Dutch, it is relevant to find out how these children behave in regard to its use in the different conditions. The use of *gaan*+INF in other conditions than the prospective provides additional evidence that it is a dummy auxiliary, exempt of meaning.

those items from the scale would make no difference in its reliability, so they were kept in the experiment.

Target scores and non-target responses

Figure 5-7 shows the mean proportions and error bars (+/- 2SE) of target responses in the present and the past tense conditions, split out for the six groups of children.

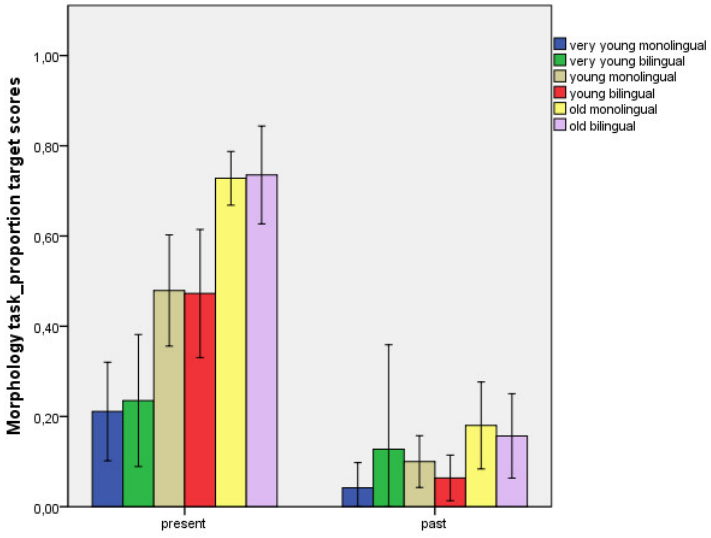

Figure 5-7. Mean proportions of target responses and error bars (+/- 2*SE*) per group of children for the two conditions

In Figure 5-7 an increase in target scores as the children grow older can be observed in the present tense condition. In the past tense condition there is some increase in target responses as a function of age, but the difference among the groups is not as evident as in the present tense condition. In order to establish the distribution of the data, boxplots were drawn that are shown in Figure 5-8.

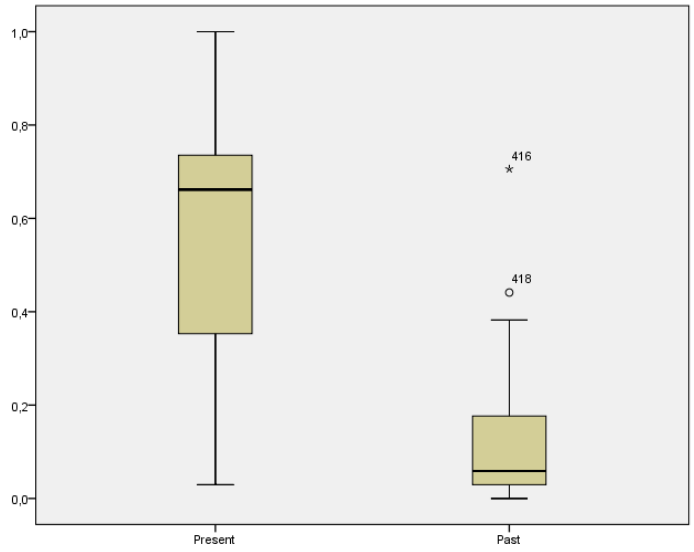

Figure 5-8. Distributional characteristics of target scores in the Morphology task

As can be seen in Figure 5-8, children behave quite differently in the two conditions. In the present tense condition the boxplot is situated in the upper part of the graph and is negatively skewed with a longer whisker on the lower part of the box, whereas in the past condition the opposite happens. Variation between the children is large, particularly in the lower 50% of the present tense. The upper 50% of this condition is situated high in the graph and the data is less spread out, indicating more homogeneity and also command of this construction by this half of the participants. In the past tense the variation is small, particularly on the lower 50%. The boxplot is situated in the lower part of the graph, showing limited command of past tense inflection. There were no outliers in the present tense condition, but there were two in the past tense. They were two Turkish bilingual children, aged 5;1 and 8;7 years. The younger was a VY-bilingual and was probably responsible for the high percentage of correct scores of this group in the past tense condition.

An ANOVA was applied on target utterances[59], with the four factors involved: tense, age, $^{mono}/_{bi}$lingualism, and verb type. Five strong, dominant effects (partial eta squared > .10), including three main effects, turned out to be present. The three main

[59] Target utterances were those in which the target verb was used, and the finite form of the lexical verb agreed with the subject in the present and past tense respectively. The constructions '*zijn aan het* (be.PRES/PAST on the) + INF', '*zijn bezig met* (be. PRES/PAST busy with) + INF', and '*zitten*/*staan*/*liggen* te (sit/stand/lay.PRES/PAST to) + INF' were also considered correct for both conditions.

effects were: tense (F(1, 50) = 127.023, *p* =.000, η_p^2=.718), age (F(2, 50) = 11.529, *p* =.000, η_p^2=.316), and verb type (F(2, 100) = 3.476, *p* =.000, η_p^2=.379). The fourth main effect of $^{mono}/_{bi}$lingualism was not significant (F (1, 50) = .451, p=.505, η_p^2=.009). The other two strong effects were two two-way interactions: tense by age (F(2, 50) = 11.416, p=.000, η_p^2=.313) and tense by verb type (F (2, 100) = 40.872, p=.000, η_p^2=.450). Given the fact that tense is the strongest factor, we continued by analysing the two tenses separately.

The ANOVA for present tense returned two significant, strong effects, both being main effects: verb type (F(1.597, 117.367) = 63.630, p = .000, η_p^2=.487) and age (F(2, 67) = 22.873, p = .000, η_p^2=.379). None of the other effects was significant ($^{mono}/_{bi}$lingualism (F<1), age by $^{mono}/_{bi}$lingualism (F<1), verb type by age (F(3.503, 117.367) = 1.102, p = .356, η_p^2=.032), verb type by $^{mono}/_{bi}$lingualism (F(1.751, 117.367) = 2.794, p = .072, η_p^2=.040), verb type by age by $^{mono}/_{bi}$lingualism (F(3.503, 117.367) = 1.819, p=.138, η_p^2=.052). The two main effects are visualized in Figure 5-9. The age effect has an increasing pattern in all verb types. The figure also shows that the particle verbs are the most difficult ones for the children, in all age groups. These observations are corroborated by the statistical outcomes. Posthoc comparisons (Tukey HSD) give significant outcomes for all age pairs. The same applies to the pairwise comparison (LSD) of the three verb types. All comparisons have a significant outcome.

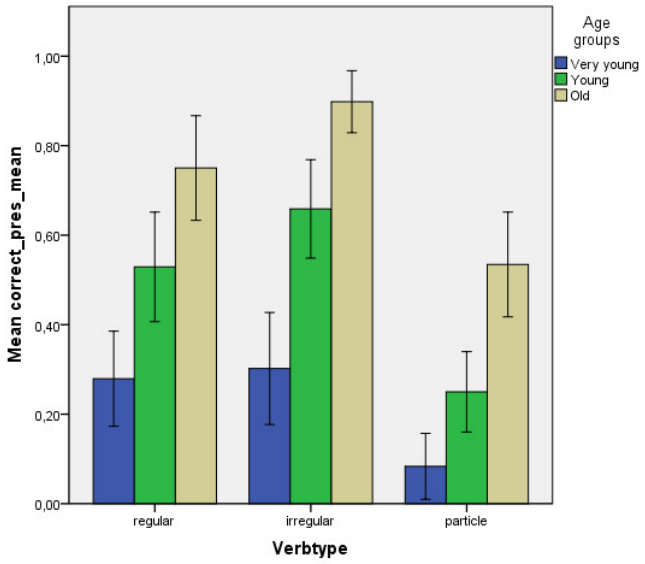

Figure 5-9. Mean proportions of target responses and error bars (+/- 2*SE*) in the present tense condition, split out for verb type and age groups

The ANOVA for past tense gives less outspoken outcomes. There are only two significant effects and both have a lower effect (< .10): verb type (F (1.746, 86.982) = 5.214, p = .010, η_p^2=.093), and verb type by $^{mono}/_{bi}$lingualism (F (1.706, 86.982) = 4.316, p = .016, η_p^2=.078). The other, non-significant effects are: $^{mono}/_{bi}$lingualism (F < 1), age by $^{mono}/_{bi}$lingualism (F (2, 51) = 1.707, p = .192, η_p^2=.063), verb type by age (F < 1), verb type by age by $^{mono}/_{bi}$lingualism (F (3.411, 86.982) = 1.813, p = .143, η_p^2=.066). Figure 5-10 shows the interaction between verb types and $^{mono}/_{bi}$lingualism.

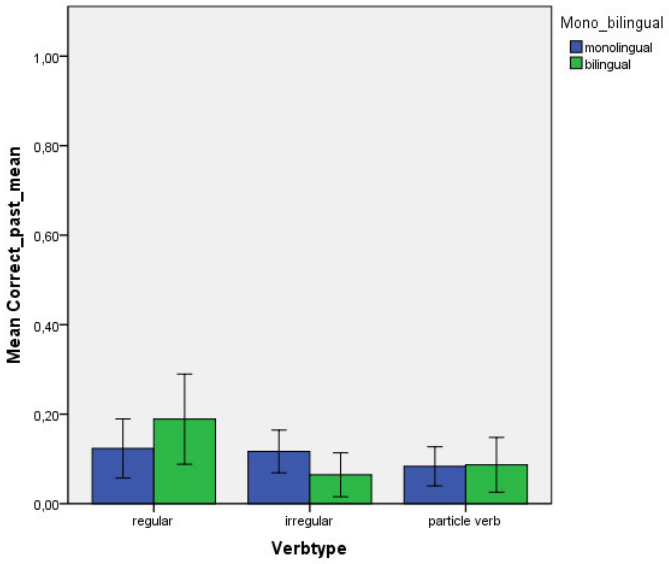

Figure 5-10. Mean proportions of target responses and error bars (+/- 2*SE*) in the past tense condition split out for verb type and $^{mono}/_{bi}$lingualism

Figure 5-10 makes clear that all verb types are difficult, but that the regular verbs have the highest score (pairwise comparisons, LSD). This applies to the bilinguals in particular.

Table 5-4 shows the target and the three most frequent non-target constructions used in this task. Table 5-4 shows that, although the percentages among the groups vary considerably, all groups used the target constructions. It can also be seen that, in the present tense, the most frequent error made by the four youngest groups was the use of the *gaan*+INF construction. The two oldest groups used considerably lower percentages of dummy auxiliaries. In the past tense condition, the most common error was the use of the present instead of the past tense. The only two exceptions to this were the VY-bilinguals, who used more non-finite verbs, indicating as expected, a less advanced stage of development, and the O-bilinguals who used the *ging* (go.PAST.3SG)+INF construction more often than other constructions and than the other groups.

Table 5-4. Morphology task: target and non-target constructions produced in the two conditions by the six groups of children

	Target					
	Very young		Young		Old	
	Mono-lingual	Bilingual	Mono-lingual	Bilingual	Mono-lingual	Bilingual
Present	present 19.4%	present 26.5%	present 49.5%	present 50.6%	present 77.2%	present 75.6%
	zijn+aanhet+INF 4.2%		zijn+aanhet+INF 0.2%		zitten/staante+INF 0.4%	zijn+aanhet+INF 0.6%
			zitten/staante+INF 0.5%			zitten/staante+INF 1.5%
Past	past 5.9 %	past 14.7%	past 12.2%	past 8.1%	past 19.9%	past 17.3%
	Non-Target*					
Present	*gaan*+INF 40.9%	*gaan*+INF 28.5%	*gaan*+INF 21.1%	*gaan*+INF 24.2%	stem 8.8%	stem 5.0%
	non-finite 17.8%	non-finite 21%	stem 14.2%	stem 7.8%	*gaan*+INF 5.5%	present 3.6%
	stem 4.8%	zijn+inf 10.9%	non-finite 5.9%	non-finite 6.7%	present 5.1%	*gaan*+INF 2.6%
Past	present 24.8%	non-finite 26.5%	present 36.7%	present 32.8%	present 38.2%	*ging*+INF 32.7%
	gaan+INF 18.5%	present 22.5%	*ging*+INF 25.1%	*ging*+INF 13%	incorrectly inflected past 18.8%	present 13.7%
	ging+INF 18.5%	past participle 5.4%	incorrectly inflected past 4.9%	non-finite 10.5%	*ging*+INF 8.5%	incorrectly inflected past 12.7%

* In the present and past conditions, the finite lexical verb is grammatically correct in both the present and past tenses. The reason why they are considered incorrect here is that the utterances were produced with a verb other than the target verb.

Two observations are particularly interesting:

1. In the present tense, only the group of VY-bilinguals used the dummy *zijn* relatively often. However, detailed examination at the individual level shows that only one child used this dummy extensively. The other children who used this dummy did so only once or twice in this task;
2. In the past tense condition, the VY-monolinguals used a high percentage of the dummy *gaan* (both *gaan*+INF and *ging*+INF). The Y-monolinguals and the O-

monolinguals no longer used *gaan*+INF, but used *ging*+INF instead. Simultaneously, a clear decrease in the total percentage of dummy auxiliaries as children grow older was observed. However, a different picture arises in the bilingual group: the dummy auxiliary was not among the three more common errors produced by the VY-bilinguals. The Y-bilinguals used it often and its use increased with more exposure to Dutch. This difference between the monolingual and the bilingual children will be further elaborated in the discussion section.

In this task, as in the Narrative task, all three groups of children made the same types of errors, suggesting the same path of development.

Dummy auxiliaries

Figure 5-11 gives the mean proportions and error bars (+/- 2SE) of the total number of dummy auxiliaries in the present and the past tense conditions, broken down among the six groups of children.

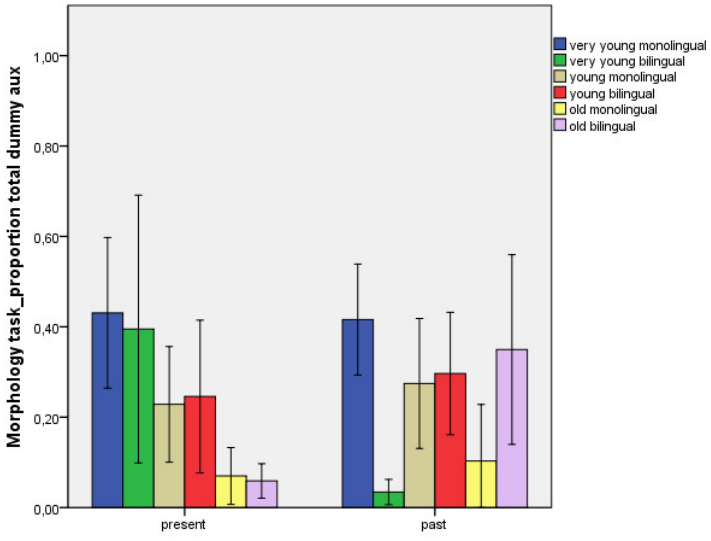

Figure 5-11. Mean proportions of dummy auxiliaries and error bars (+/- 2*SE*) per group of children for the two conditions of present and past tense

As for the use of dummy auxiliaries, the error bars also indicate a great variability among the children. The boxplots in Figure 5-12 show the distribution of the data.

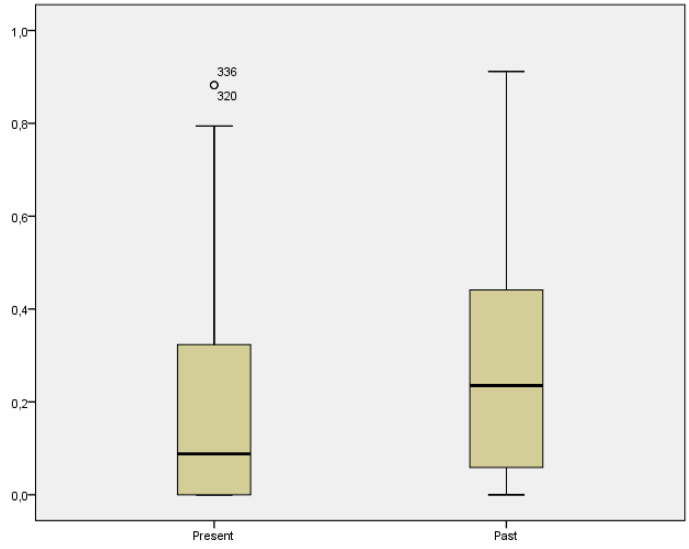

Figure 5-12. Distributional characteristics of dummy auxiliaries in the present and past tense

Both boxplots are on the lower part of the graph indicating no extreme use of dummy auxiliaries. The positively skewed box in the present tense condition shows the largest variation in the upper 50%. In this condition there were two outliers: two monolingual children aged 5;6 and 6;6 years, who used considerably more dummy auxiliaries than the other children. There were no outliers in the past condition. In this condition the longer whisker on the upper part of the box shows that the variation in the upper quartile is larger than in the lower quartile.

The ANOVA reveals five effects with effect size of > .10.There are two main effects: verb type (F (1.568, 78.406) = 12.252, p =.000, η_p^2=.197) and age (F (2, 50) = 3.502, p =.038, η_p^2=.123). The other three effects are tense by age (F(2, 78.406) = 5.282, p =.008, η_p^2=.174), verb type by tense by age (F(2, 3.005, 75.137) = 3.549, p =.018, η_p^2=.124) and age by $^{\text{mono}}/_{\text{bi}}$lingualism ($F$(2, 50) = 4.192, p =.021, η_p^2=.144).

Given the involvement of tense we again carried out two separate ANOVAs for, respectively, present and past tense. The ANOVA for present tense produced three significant and strong effects, the main effects verb type ($F(1.357, 90.911) = 16.034$, $p = .000$, $\eta_p^2 = .193$) and age ($F(2, 67) = 7.259$, $p = .001$, $\eta_p^2 = .178$), and the interaction effect of verb type by age ($F(2.714, 90.911) = 6.012$, $p = .008$, $\eta_p^2 = .152$). None of the other effects was significant ($^{mono}/_{bi}$lingualism ($F<1$), age by $^{mono}/_{bi}$lingualism ($F<1$), verb type by $^{mono}/_{bi}$lingualism ($F<1$), and verb type by age by $^{mono}/_{bi}$lingualism ($F<1$). The significant effects of age and verb type are visualized in Figure 5-13. It shows the age effect, the number of dummy auxiliaries decreasing with age. It shows as well the particular position of the particle verbs, in especially in relation to the oldest age group. It is the only verb type category where the oldest age group used dummy auxiliaries more frequently.

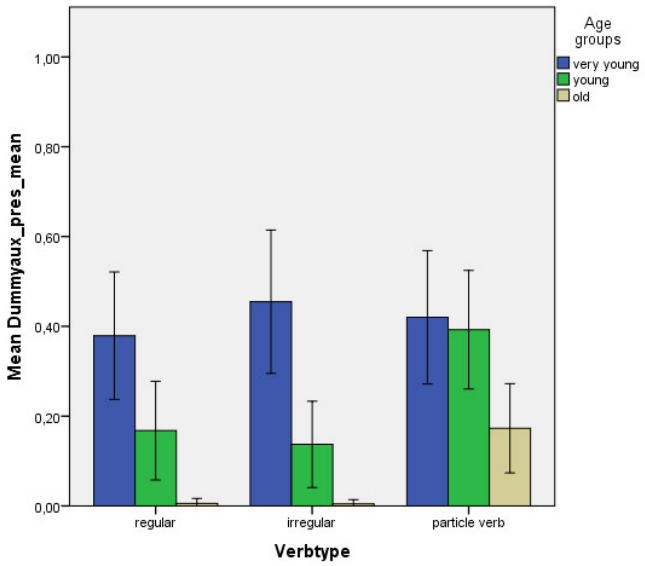

Figure 5-13. Mean proportions of dummy auxiliaries and error bars (+/- 2*SE*) in the present tense split out for verb type and $^{mono}/_{bi}$lingualism

The ANOVA for past tense gives only one significant result: age by $^{mono}/_{bi}$lingualism ($F(2, 51) = 5.180$, $p = .009$, $\eta_p^2 = .169$). The other size effects are not significant: verb type ($F(1.984, 101.179) = 2.653$, $p = .076$, $\eta_p^2 = .049$), age ($F<1$),

$^{mono}/_{bi}$lingualism (F<1), verb type by age (F<1), verb type by $^{mono}/_{bi}$lingualism (F (1.984, 101.179) = 1.183, p = .310, η_p^2=.023), verb type by age by $^{mono}/_{bi}$lingualism (F<1). Figure 5-14 shows the interaction effect of age by $^{mono}/_{bi}$lingualism. There is obviously an opposite age effect in the two language groups. There is a decrease of the use of dummy auxiliaries in the monolingual group, whereas in the bilingual group an increase is observed.

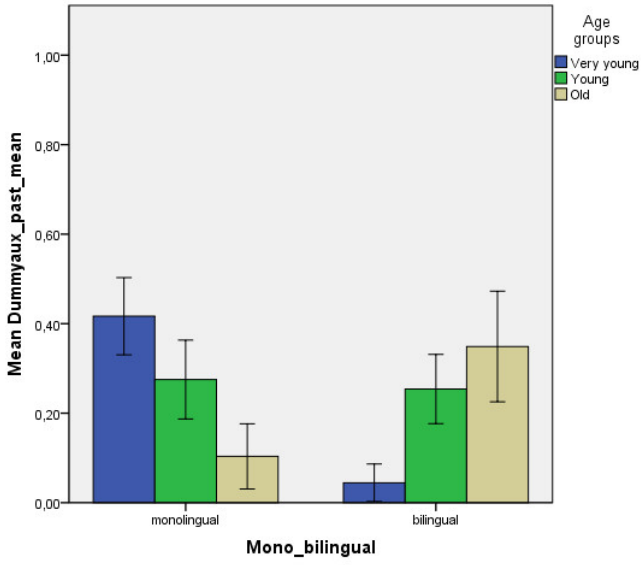

Figure 5-14. Mean proportions of dummy auxiliaries and error bars (+/- 2*SE*) in the past tense split out for verb type and $^{mono}/_{bi}$lingualism.

5.3.4. Completion experiment Syntax: inversion and no-inversion

An analysis of the items' reliability was carried out for each of the two conditions of this task. The items in both conditions have a high reliability: the no-inversion condition has α=.897 and the inversion condition α=.913. There were no deviant items.

Target scores and non-target responses

Figure 5-15 shows the mean proportions of target responses and error bars for each condition split out for the six groups of children[60]. Five monolingual children were too tired to perform this task.

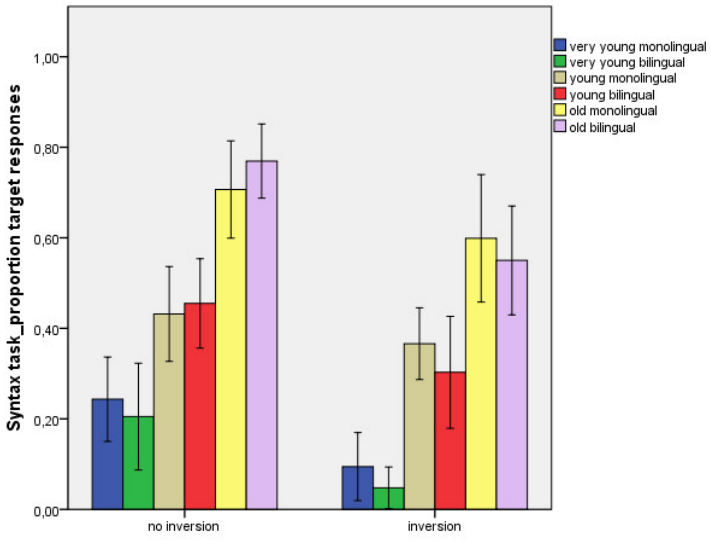

Figure 5-15. Mean proportions of target responses and error bars (+/- 2*SE*) in the inversion and no-inversion conditions split out per group of children

The main effect of condition, with lower target scores in the inversion condition, can be taken as an indication that inversion is more difficult than the no-inversion order, particularly for the very young children.

Figure 5-16 gives the boxplots of the target scores in the two conditions.

[60] An utterance was considered target if all the following criteria were met: (1) in the inversion condition, inversion was realised (VS order), (2) the target verb was used, (3) the verb reflected imperfective aspect, and (4) the finite form of the lexical verb or the auxiliary verb was congruent with the subject.

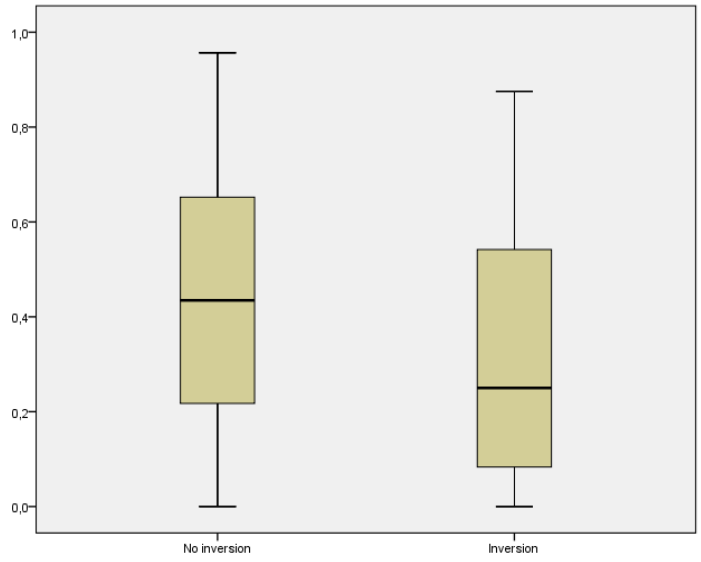

Figure 5-16. Distributional characteristics of target scores in the Syntax task

The boxplots show the diversity of target scores in both conditions, with no outliers and with higher scores in the no-inversion condition. The normal skewness of the boxplot in the no-inversion condition and the equally long whiskers on both sides of the box indicate that the variation is evenly distributed. The positive skewness and the longer whiskers on the upper part of the boxplot of the inversion condition indicate that the data in this condition are more spread out in the upper 50%. Not only the skewness, but also the short whisker show that there is less variation among the participants in the lower half of the inversion condition.

The ANOVA on target responses delivers three strong (effect size > .10), significant effects. Verb type by inversion (F (1.911, 120.417) = 102.068, p = .000, η_p^2 = .618), age (F (2, 63) = 49.581, p = .000, η_p^2 = .611) and verb type by age (F (3.174, 106.283) = 3.546, p = .014, η_p^2 = .101.

Given the involvement of inversion, we carried out separate ANOVAs for the two conditions of inversion and no-inversion. The ANOVA for the no-inversion condition produces four significant effects. Two of them were main effects: age (F (2, 63) = 38.131, p = .000, η_p^2 = .549) and verb type (F (2.134, 121.297), p = .000, η_p^2 = .572). The third one was not significant: $^{mono}/_{bi}$lingualism (F<1). The results for

the four interactions were as follows: age by $^{mono}/_{bi}$lingualism (F<1), verb type by age F (3.851, 121.297) = 3.847, p = .006, η_p^2 = .109, verb type by $^{mono}/_{bi}$lingualism F (1.925, 121.297) = 3.696, p = .029, η_p^2 = .055, and verb type by age by $^{mono}/_{bi}$lingualism F (3.851, 121.297) = 1.606, p = .179, η_p^2 = .049.

The histograms for the variables age and verb type are shown in Figure 5-17. The histograms for the variables $^{mono}/_{bi}$lingualism and verb type are shown in Figure 5-18.

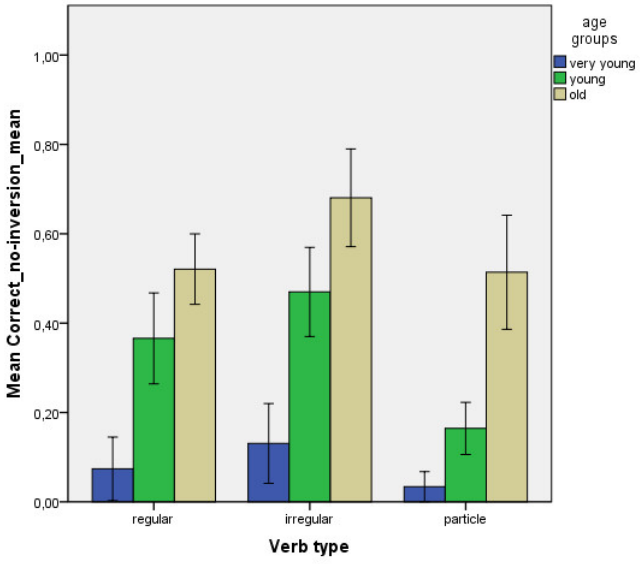

Figure 5-17. Mean proportions of target responses and error bars (+/- 2*SE*) in the no- inversion condition split out for verb type and age group

Figure 5-18 shows a systematic age effect in all age groups, the oldest group having the most target responses. The particle verbs are the most difficult category, especially for the younger age groups.

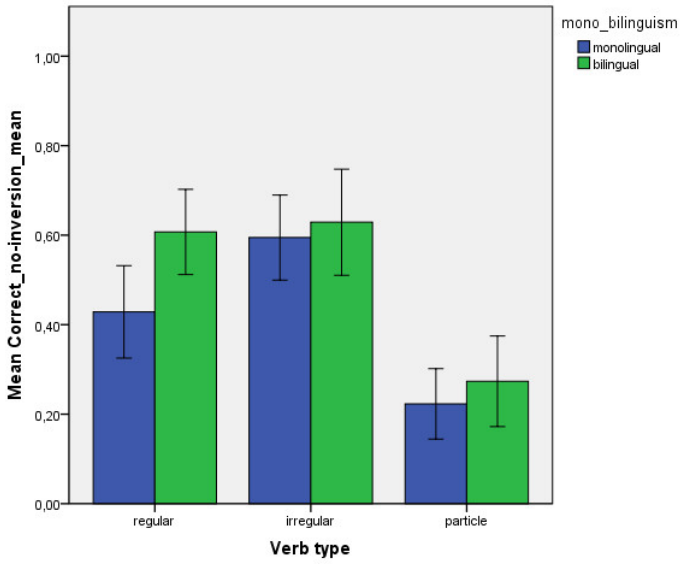

Figure 5-18. Mean proportions of target responses and error bars (+/- 2*SE*) in the conditions of no- inversion split out for verb type and language group

Figure 5-18 again shows the differences between verb types. The interaction effect is not clearly visible (it had an effect size < .10).

The ANOVA on the inversion data gave three significant effects, all with an effect size of > .10): age (F (2, 63) = 36.653, p = .000, η_p^2 = .538), verb type (F (1.126, 126), 25.182, p = .000, η_p^2 = .286) and verb type by age (F (4, 126) = 4.518, p = .002, η_p^2 = .125). The other non-significant effects were: $^{mono}/_{bi}$lingualism (F (1, 63) = 1.383, p = .244, η_p^2 = .021), age by $^{mono}/_{bi}$lingualism (F<1), verb type by $^{mono}/_{bi}$lingualism (F<1), and verb type by age by $^{mono}/_{bi}$lingualism ((F<1). The results for the significant effects are visualized in Figure 5-19.

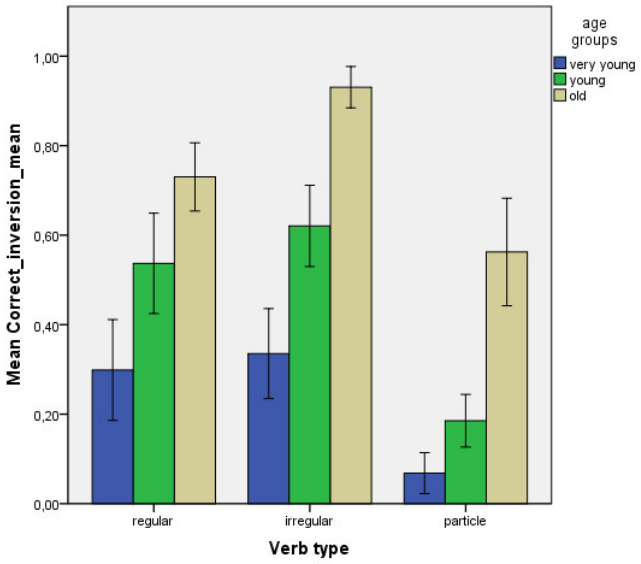

Figure 5-19. Mean proportions of target responses and error bars (+/- 2*SE*) in the inversion condition split out for verb type and age group

Figure 5-19 shows a regular age effect, with increasing target scores from young to old. Table 5-5 displays the target and non-target constructions used in this task.

Table 5-5 shows that the six groups of children achieve the highest percentages of target constructions in the no-inversion order, suggesting that this condition is the easiest. As for the constructions used when the target is not produced, Table 5-5 reveals that, in both conditions, *gaan*+INF was the most often used construction by the four youngest groups of children, and the second or third most often used by the older children. The two youngest groups still used non-finite verbs and the VY-bilinguals used them twice as much. In the other four groups, both monolinguals and bilinguals did not use non-finite forms. The dummy *zijn* was also used in both conditions of this task, though in such low percentages that it is not mentioned in Table 5-5. Four children, one monolingual and three bilingual, used this dummy. One of them, as in the other two tasks, was the one who used it the most; in this case, 15 times (nine in the no-inversion and six in the inversion conditions). Two of the other three children used it once and one used it twice, once in each condition. Three of the children were very young and had not more than 4 to 5 years of exposure to Dutch.

In this task, just as in the others, the same errors, though in different percentages, occurred across the six groups of children, suggesting the same trajectory of acquisition. It is important to mention that, when using the dummy auxiliary in the inversion condition most children inverted the subject and the auxiliary, showing a command of the V2-rule.

Table 5-5. Syntax task: target constructions produced in the two conditions split out for the three groups of children

	Target					
Order	Very young		Young		Old	
	Mono-lingual	Bilingual	Mono-lingual	Bilingual	Mono-lingual	Bilingual
No-inversion	present 22.9% zijn+aanhet + INF 1.4%	present 19.9% zitten/staan te+INF 0.6%	present 42.9%	present 45.5%	present 70.5% zijn+aanhet +INF 0.5%	present 77%
Inversion	present 9.2 % zijn+aanhet +INF 0.3%	present 4.8 %	present 36.6 %	present 30.3 %	present 59.9 %	present 52.9 % zijn+aanhet +INF 1.3% zitten/staan te+INF 0.8%
	Non-Target*					
No-inversion	*gaan*+INF 33% non-finite 11% *present* *8*.1%	*gaan*+INF 28.5% non-finite 20.5% stem 8.7%	*gaan*+INF 25.2% stem 1 6.1% present 8.1%	*gaan*+INF 16.8% present 12.8% stem 9.6%	stem 9.8% *gaan*+INF 8.7% present 6.6%	stem 6.5% *gaan*+INF 6.1% present 4.8%
Inversion	*gaan*+INF 44.6% non-finite 14.2% present 13.6%	*gaan*+INF 29.8% non-finite 28% present 20.2%	*gaan*+INF 28% present 14.9% stem 9.5%	*gaan*+INF 24.4% present 21.4% non-finite 6.1%	present 18.8% *gaan*+INF 10.4% stem 4.7%	present 18.8% stem 9.6% *gaan*+INF 7.5%

*The finite lexical verb is grammatically correct in both conditions. Here they are considered incorrect because the utterances were produced with a verb other than the target verb.

Dummy auxiliaries

Figure 5-20 shows the mean proportions of dummy auxiliaries and error bars for each condition split out for the six groups of children.

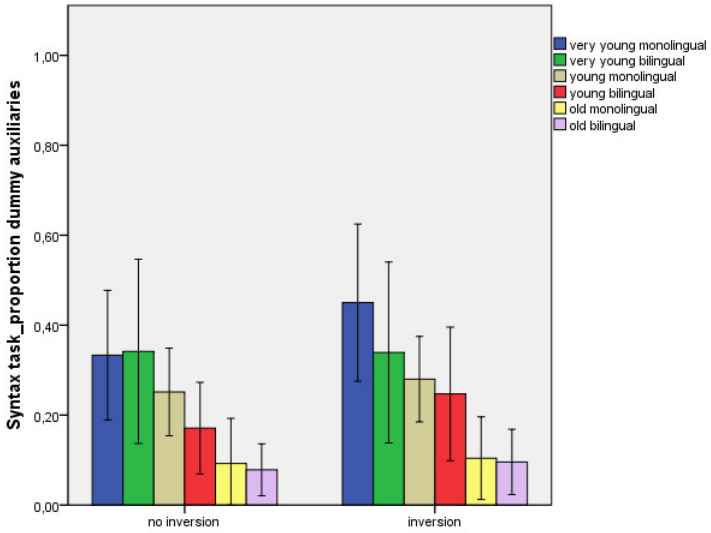

Figure 5-20. Mean proportions of target responses dummy auxiliaries and error bars (+/- 2*SE*) split out per group of children

The boxplots in Figure 5-21 show the distribution of the data in the Syntax task.

The positive skewness and the long whiskers in both conditions of the Syntax task indicate a large variation in the two upper quartiles. The fact that both boxes are placed in the lower part of the graph show that use of dummy auxiliaries is not extreme in any of the conditions. There was only one outlier in the no-inversion condition, a monolingual 5;1 year-old who produced 19 out of 23 utterances with a dummy auxiliary and only 4 finite verbs.

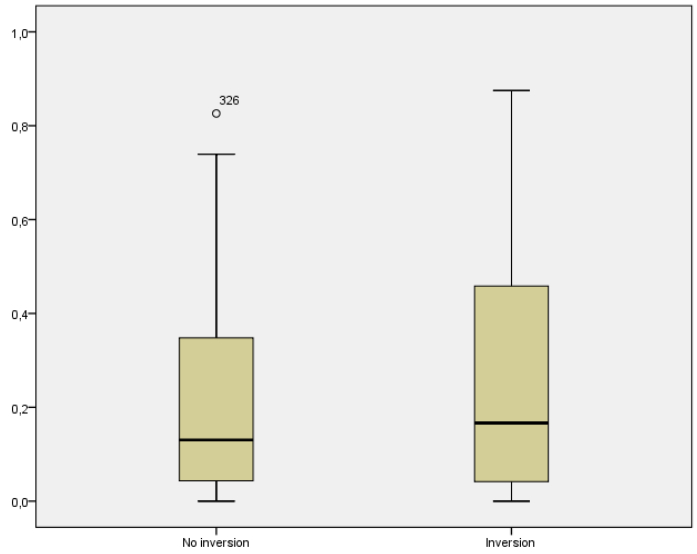

Figure 5-21. Distributional characteristics of the dummy auxiliaries in the Syntax task

The ANOVA gave four significant effects, all with an effect size of >.10. All other effects were not significant: verb type by $^{mono}/_{bi}$lingualism (F (1.746, 109.980 = 1.895, p = .252, η_p^2=.022), inversion by age by $^{mono}/_{bi}$lingualism (F(2.63) = 2.615, p = .081, η_p^2 = .077), verb type by inversion (F(2.63) = 1.949, p = .147, η_p^2 = .030), $^{mono}/_{bi}$lingualism (F<1), age by $^{mono}/_{bi}$lingualism (F<1), inversion by $^{mono}/_{bi}$lingualism (F<1), inversion by age (F<1), verb type by age by $^{mono}/_{bi}$lingualism (F<1) and verb type by age by inversion by $^{mono}/_{bi}$lingualism (F<1).

The significant effects were age (F (1, 63) = 7.083, p = .002, η_p^2=.184), verb type (F (.781, 109.980) = 15.998, p = .000, η_p^2=.203), verb type by age (F (3.491, 109.980) = 3.787, p = .009, η_p^2=.107) and inversion F (1, 63) = 7.494, p = .008, η_p^2 =.106. The effect of inversion means that more auxiliaries were used in the inversion condition. The effects of verb type and age are visualized in Figure 5-22.

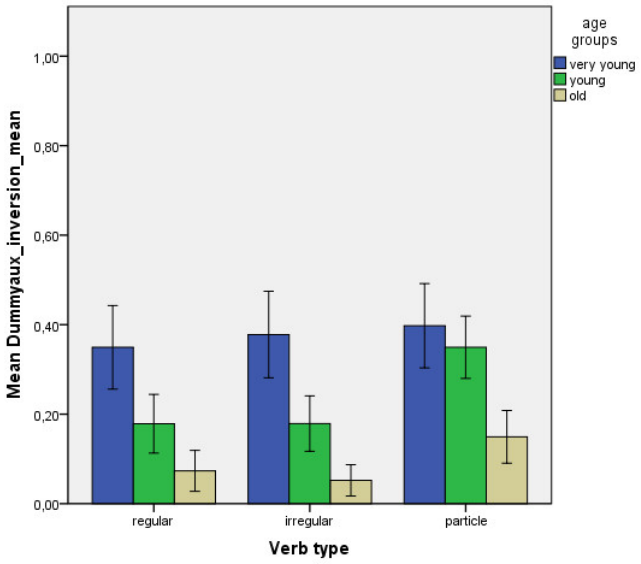

Figure 5-22. Mean proportions of dummy auxiliaries and error bars (+/- 2*SE*) split out for age group and verb type

Figure 5-22 reveals that there is a clear age effect showing a decreasing number of dummies the older the children are. However, that decrease happens very slowly. This is particularly evident with particle verbs. There is a relatively high increase in frequency for the particle verbs in the older children. The very young children show a much flatter pattern over the three verb types.

5.3.5. Overview of the effects in the tasks

Table 5-6 gives an overview of the effects found in the four tasks. The table reveals that in none of the tasks a main effect of $^{Mono}/_{bi}$lingualism was found.

In the Comprehension task, there is a main effect of age and an interaction effect of age (LoE) and aspect which show that understanding of aspect grows with LoE and that, in particular, comprehension of the prospective meaning of *gaan*+INF requires several years of exposure to Dutch.

Table 5-6. Global effects of the main effects of condition, age, mono/bilingualism and verb types (if applicable) on the target scores and dummy auxiliaries, and the significant interactions.

	Comprehension: Aspect	**Narrative: Aspect**	**Completion task Morphology: Tense**	**Completion task Syntax: Inversion**
Target	Aspect .....+	Aspect .....+	Tense.....+	Inversion ..... +
	Age .....+ (prospective condition)	Age.....+ (all conditions)	Age.....+ (present)	Age..... + (both conditions)
	Mono/ bilingualism .....–	Mono/ bilingualism .....–	Mono/ bilingualism .....–	Mono/ bilingualism .....–
	Aspect x age .....+		Verb type .....+ (both conditions)	Verb type..... + (both conditions)
			Tense x age .....+	Verb type x age . + (both conditions)
			Tense x verb type+	Verb type x inversion..... +
			Verb type x Mono/ bilingualism .....+ (past)	Verb type x Mono/ bilingualism ..... + (no-inversion)
Dummy Auxiliary	n.a.	Aspect .....+	Tense.....+	Inversion ..... +
		Age.....–	Age.....+ (present)	Age..... + (both conditions)
		Mono/ bilingualism .....–	Mono/ bilingualism .....–	Mono/ bilingualism .....–
			Verb type .....+ (present tense)	Verb type..... + (both conditions)
			Tense x age .....+ (present tense)	Verb type x age . + (both conditions)
			Verb type x age x tense .....+ (present tense)	
			Age by Mono /bilingualism .....+ (past tense)	
	– = no effect; + = effect			

In the Narrative task there is a main effect of age with regard to target scores, but not in relation to dummy auxiliary use. Target scores also increase with age (LoE) in all conditions. In this task there is also a main effect of aspect. Significantly more (dummy) auxiliaries are used in the prospective and imperfective conditions than in the perfect condition.

In the Morphology task, there is a main effect of age on target responses and on dummy auxiliary use, but only in the present tense condition. There is a main effect of verb type on target response in both conditions. However, with regard to dummy auxiliary use, there is an effect of verb type only in the present tense. The effect of age and verb type on target responses in the present condition shows that particle verbs are the most difficult of all three verb types in all age groups.

The main effect of verb type in the past condition, together with the interaction effect between verb type and $^{\text{Mono}}/_{\text{bi}}$lingualism, show that the monolinguals had more difficulty with particle verbs than with the other two verb types, and the bilinguals with both the irregular and the particle verbs. Interestingly, the bilinguals scored better than the monolinguals in the inflection of regular verbs. We dealt with these interactions by doing two ANOVAs for the tenses separately. The age effect only emerged in the present tense. The interaction effects, including verb type, show an overall patterm of regular verbs being the easiest ones.

With regard to dummy auxiliary use, there is a main effect of verb type and a main effect of age. However, both effects exist only in the present tense. There is also an interaction effect of verb type by age. This interaction shows that the number of dummy auxiliaries decreases with age. It is remarkable that the oldest age group hardly used dummy auxiliaries with the other two verb types, but did so with the particle verbs. This suggests that dummy auxiliary use is related to the difficulty in inflecting this verb type, as evidenced by their lower target scores with this verb type. In the past tense condition, no effect of verb type on dummy auxiliaries is seen. In the past tense condition, there is an interaction between age and $^{\text{Mono}}/_{\text{bi}}$lingualism, which shows an opposite age effect in the two language groups. This interaction will be explained in detail in the discussion section.

In the Syntax task there are three main effects, of inversion (there were fewer target scores and more auxiliaries in the inversion condition), age (older children perform better and use fewer dummy auxiliaries than younger children) and verb type (particle verbs are the most difficult and elicit more dummy auxiliaries), not only on target responses but also on dummy use and in both conditions. There was also an interaction effect verb type by age in both conditions, which showed a steady

increase of target scores and a decrease of dummy auxiliaries in all verb types as children grow older, but to different degrees. The particle verbs are the most difficult category, particularly for the younger groups. In addition, there was an interaction effect between verb type and $^{mono}/_{bi}$lingualism on target responses, but this is shown only in the no-inversion condition. It shows a tendency for the bilingual group to perform better than the monolingual group, particularly in regard to regular verbs. Here again the particle verbs are the most difficult for both language groups.

5.4. Detailed analysis of the use of dummy auxiliaries

Table 5-7 presents an overview of the frequencies of occurrence of the dummy auxiliaries used by all children in the three production tasks and seven conditions.

Table 5-7. Narrative and completion experiments: Dummy auxiliaries and their frequencies of occurrence in the three experimental conditions by all six groups of children

		Zijn	*Gaan*	*Doen*	*Hebben*
Narrative experiment	Prospective	12	d.n.a.(443)	7	0
	Imperfective	17	436	6	0
	Perfect	9	127	3	3
Completion experiments	Present tense	64	572	22	0
	Past tense	12	483	3	1
	No-inversion order	11	331	3	0
	Inversion order	8	428	9	0
	Total	133	2377	53	4

As can be seen in Table 5-7, four different dummy auxiliaries were found in these experiments: *zijn*, *gaan*, *doen* and *hebben*. The (dummy) auxiliary *gaan* occurs considerably more frequently than the other dummy auxiliaries. Although in standard Dutch *gaan*+INF is the correct construction to express prospective aspect, and thus, in that condition is not a dummy auxiliary but rather a real auxiliary of aspect, we cannot be sure that the participants really wanted to express prospective aspect when using it in that condition. However, since we know from the results of the comprehension task that only a small number of the participants were aware of the prospective meaning of *gaan*+INF, we can assume that a substantial number of the target responses in that condition consisted of dummy auxiliaries. The dummy auxiliary *zijn* is the second most used dummy auxiliary. This dummy auxiliary is used substantially less often than the dummy *gaan*, but twice as often as the dummy

auxiliary *doen.* The fact that the 'dummy' *hebben* is used only sporadically and in the perfect and past conditions of the Narrative and Morphology tasks, suggests that this is not a real dummy, but rather an attempt at producing the present perfect construction.

We have seen that the variability among the participants in the use of dummy auxiliaries is large (as evidenced by the long error bars in almost all figures shown above). For this reason, an analysis of individual variation in the use of dummy auxiliaries is presented in the next section.

To investigate individual variation, participants were divided into three groups on the basis of their production of dummy auxiliaries across all conditions of the three production tasks[61]:

(i) *Extreme dummy users*, who used dummy auxiliaries twenty times or more often;
(ii) *Occasional dummy users*, who used dummy auxiliaries between ten and nineteen times;
(iii) *Infrequent dummy users,* who used dummy auxiliaries up to nine times.

Table 5-8. Use of dummy auxiliaries by three types of dummy users

	Group	Extreme	Occasional	Infrequent
Dummy *gaan*	VY-monolinguals	2		1
	VY-bilinguals	2		
	Y-monolinguals	9	2	1
	Y-bilinguals	4	2	1
	O-monolinguals	1	2	
	O-bilinguals	2	1	1
Mixed dummies	VY-monolinguals	9		5
	VY-bilinguals	4	2	
	Y-monolinguals	2	1	2
	Y-bilinguals	4		3
	O-monolinguals	1	2	2
	O-bilinguals	1	5	
Total		41	17	16

[61] Although 19 participants did not perform one or two of the tasks, their performance on the remaining tasks, showed such clear tendencies for a particular type, that is was possible to place them, almost without doubt, in one of the above categories.

They were also split into two categories: those who used only the dummy *gaan* and those who, besides using the dummy *gaan,* also used other dummy auxiliaries. All participants used the dummy *gaan.* Table 5-8 displays the three types of dummy users distributed over the three groups of children.

Table 5-8 shows that there were more *Extreme* (41) than *Occasional* (17), and *Infrequent (*16) dummy users. The variability among the children is large. There were children who used dummy auxiliaries only twice and there are those who used them more than 50 times. There were almost as many children who used only the dummy *gaan* (20) as children who used different dummy auxiliaries (22). The latter predominantly used the dummy *gaan* and, occasionally, the dummy *zijn* and/or the dummy *doen*. There were only seven participants (3 monolinguals and 4 bilinguals) who used the dummy *doen* or the dummy *zijn* more often than the dummy *gaan.* One of them, a VY-bilingual Tarifiyt-speaking five year-old, stood out because he used the dummy *zijn* much more often than any other child: 52 times (11 in the imperfective, one in the prospective and one in the perfect of the Narrative task; 9 in the no-inversion, 6 in the inversion of the Syntax task, and 24 in the present tense of the Morphology task). None of the other children who used the dummy *zijn* did so more than six times across all tasks. They varied in age and language background: there were two VY- monolinguals, two VY-bilinguals, three Y-bilinguals and one O-bilingual. The following examples (7) and (8) illustrate the use of the dummy auxiliary *zijn*. The utterance in example 7 was produced by a monolingual 68-month-old boy, in the imperfective condition of the Narrative task. The utterance in example 8 was produced in the no-inversion condition of the Syntax task by a bilingual (Tarifiyt-Dutch) 61-month-old boy. In the first example, the dummy *gaan* is preceded by the dummy *zijn* in the same utterance. In the second example, the dummy *zijn* is followed by a modal. This sporadic use of the dummy *gaan* or a modal preceded by the dummy *zijn* by very young children – not evidenced in older children - suggests that it is a phenomenon characteristic of an early stage of language development. This could be interpreted as a not yet completely suppressed use of the dummy *zijn*.

(7)	*'De*	*zeehond*	*is*	*gaat*	*huilen.'*
	The	seal	be.PRES.3SG	go.PRES.3SG	cry.INF
	'The seal cries.'				

(8)	*'Pingu*	*is*	*mag*	*niet*	*slapen.'*
	Pingu	be.PRES.3SG	may.PRES.3SG	not	sleep.INF

'Pingu may not/is not allowed to sleep.'

5.5. Discussion

The central question of this study was whether dummy auxiliaries play a role in the acquisition of finiteness in Dutch, and what that role is. Four experimental tasks (seven conditions) were administered to the participants. We specified six research questions, all related to concrete predictions based on earlier research.

As expected in the first research question, dummy auxiliaries, particularly the dummy *gaan*, were used in all production tasks by L1 and L2 SLI children. However, just as in other studies (e.g., De Jong et al., 2013; Orgassa, 2009; Zwitserlood, 2015), the individual variation is large. Although all participants used dummy auxiliaries, some children used them only twice and others used them more than 50 times.

Another expectation that was confirmed is that most children assign a neutral meaning to dummy auxiliaries (see research question 2). The results corroborate studies by Zuckerman (2001; 2013), Verhagen (2013) and Julien et al. (chapters 2, 3 and 4) that have respectively shown that, in the beginning of the acquisition process, young TD monolingual children do not associate *gaan*+INF with prospective or inchoative aspect (Zuckerman), adult bilinguals do not ascertain perfect meaning to *zijn*+INF (Verhagen; Julien et al., chapter 3), and adult DAL learners and monolingual and bilingual TD children, assign a neutral meaning to *gaan*+INF and *zijn*+INF (Julien et al., chapters 2, 3 and 4). In fact, it can be concluded that understanding of the prospective meaning of *gaan*+INF grows very slowly, as children do not reach levels of target responses higher than 40% in the prospective condition of the comprehension task, even after eight years of exposure (that is the mean age (LoE) of the oldest monolingual children). This suggests that this aspect of Dutch grammar is difficult to acquire. Children's behavior in the Narrative task of the present study reinforces the idea that, at this stage, both *gaan*+INF and *zijn*+INF are truly meaningless. In that task they use the dummy *zijn* and *gaan* to describe the picture depicting prospective aspect as well as the pictures portraying imperfective and perfect aspects. They accompany these verbal constructions with lexical means, such as *straks* ('soon') *nu* ('now'), *al* ('already'), indicating that they need them to express tense and aspect, presumably because, in their grammar, the verbal constructions do not (yet) serve that function.

It was predicted that LoE would influence use of dummy auxiliaries (see the discussion under research question 3). The ANOVAs carried out confirm this for the present tense condition of the Morphology task and both the conditions of the Syntax task, but not for the past tense condition of the Morphology task or the Narrative task. In the present tense condition of the Morphology task, as well as in both conditions of the Syntax task, the expected decrease in dummy auxiliary use was observed as the children received more exposure to Dutch. In the past tense condition of the Morphology task the monolinguals differed from the bilinguals. The monolingual groups showed, as expected, a decrease in dummy auxiliary use as LoE increased. The bilinguals, however, showed an increase in those auxiliaries. What seems to be happening in the past tense condition is that the VY-bilinguals, having had the least exposure to Dutch of all groups, are still in a phase in which they are not yet aware of the possibility of expressing past tense by means of inflection on the verb. We must recall that in Dutch monolingual TD acquisition, the simple past tense of lexical verbs occurs relatively late, at around age three on average (1.4.1). The results of the present study (chapter 4, Table 4-5) confirm this. In the past tense condition of the Morphology task, the VY-bilingual TD (with approximately 2;3 years of exposure) produce 5% target responses (38% dummy auxiliaries), and the Y-bilinguals (with approximately 4 years of exposure) reach a percentage of 25% target responses (22% dummy auxiliaries). A considerable increase in target responses and a slow decrease of dummy auxiliaries is clearly observed in the bilingual groups between a LoE of 2;3 and 4 years. Hence, it can be inferred from this that it is indeed only after approximately 3 years of exposure that simple past tense forms start to increase and the use of *ging*+INF gradually starts to decrease. The results of the past tense condition of the present study show that the use of the dummy auxiliary by bilingual SLI children starts in the Y-bilingual SLI group (with approximately 4 years of exposure). This is more than one year later than in the bilingual TD group with the same LoE. This finding should not be surprising, since they were SLI children. Accordingly, with the expectation that SLI children perform more poorly than TD children, the percentage of target scores attained by the Y-bilingual SLI were, indeed, much lower than those of the Y-bilingual TD, namely 8%. Interestingly, the percentage of dummy auxiliaries in this SLI group was lower (13%) than in the TD group (22%). This is contrary to the expectation that SLI children would make more use of dummy auxiliaries, particularly when constructions are more difficult.

Comparison between the Y-monolinguals and the O-bilinguals (these groups had approximately the same LoE to Dutch, namely 6 years) shows that both SLI groups still used a high percentage of *ging*+INF. The fact that not only the monolingual SLI groups but also the bilingual TD groups showed a decrease of dummy auxiliary use as the exposure increased leads to the prediction that dummy auxiliary use by the bilingual SLI groups will also decrease after six years of exposure, as they learn to inflect past tense. Testing a group of bilinguals with the same period of exposure as the O-monolinguals (that is eight years) would confirm or reject this prediction.

As previously mentioned, although an effect of LoE on target responses was observed in the Narrative task, no effect was seen on the use of dummy auxiliaries. The SLI children with different LoE performed similarly. These results corroborate Zwitserlood's (2015) findings. In that study, which was also based on a narrative task, no significant decrease in dummy auxiliary use was found as the children grew older.

A plausible explanation for the different findings in the various types of tasks may be the differences in task demands. Narratives may be more taxing in terms of processing capacity, since children's utterances are (semi-)spontaneous, involving various layers of language in which they have to deal not only with morphological (e.g. inflection), syntactic (e.g. placement) and semantic issues (e.g. word retrieval), but also with tense and aspectual issues. The other tasks are sentence completion tasks, in which only one or a few words have to be inserted in a predefined slot. Plausibly, the latter type of tasks puts less demand on processing capacities, leading to more clear differences among the various age groups in those tasks. The percentages of dummy auxiliaries in comparable conditions of the various tasks in the present study (imperfective condition of the Narrative task, present condition of the Morphology task, and the non-inversion condition of the Syntax task) support this claim. These tasks are comparable in that they all elicit the present tense and imperfective aspect in simple main clauses. Tables 5-9 and 5-10 show the comparison of the percentages of dummy auxiliaries in those conditions for respectively the monolingual and the bilingual groups.

Table 5-9. Comparison of percentages of dummy auxiliaries produced by the monolingual children in three comparable conditions

	Narrative task			Morphology task			Syntax task		
Age group	Very Young	Young	Old	Very Young	Young	Old	Very Young	Young	Old
Percentage dummy aux	32.0%	25.0%	23.4%	40.9%	21.1%	5.5%	33.0%	25.2%	8.7%

Table 5-10. Comparison of percentages of dummy auxiliaries produced by the bilingual children in three comparable conditions

	Narrative task			Morphology task			Syntax task		
Age group	Very Young	Young	Old	Very Young	Young	Old	Very Young	Young	Old
Percentage dummy aux	52.4%	30.8%	14.4%	39.4%	24.2%	2.6%	28.5%	16.8%	6.1%

As can be seen from Tables 5-9 and 5-10, the bilingual groups and the older monolingual children showed much fewer dummy auxiliaries in the completion tasks than in the Narrative task. It is not clear why the very young and the young monolingual groups did not show much difference in dummy auxiliary use among the different tasks. It is possible that dummy auxiliaries are used by these children independently of any difficulties, because they truly saw the dummy *gaan* as an alternative to the inflected verb. Motherese, i.e. child directed input, in which the dummy *gaan* is extensively used by Dutch mothers (see Wijnands, 1995) may be the source of these unchanged percentages among the different tasks in the young monolingual children.

Regarding the choice of dummy auxiliaries, the prediction that the children with less exposure to Dutch would use more dummy *zijn* than the groups with more exposure to Dutch, was confirmed. In all three production tasks the two groups of VY-children, particularly the VY-bilinguals, were the groups that used the dummy construction *zijn*+INF the most often. A note of caution is due at this point, since individual variation is large. Most of the VY-children who used that dummy auxiliary used it once and sometimes twice per task or per condition. Only one (Tarifiyt-speaking) child used it extremely often (15 times in the Narrative, 24 times in the Morphology task and 16 times in the Syntax task). Nevertheless, the data show that the dummy auxiliary *zijn* was used by the children (bilingual and monolingual) with the least exposure to the target language. Moreover, there was a clear tendency for this dummy auxiliary to disappear as the children became more

exposed to Dutch. Children with more than 4 years of exposure hardly used this dummy auxiliary. Hence, these results provide support to those of Julien et al. (chapters 2, 3 and 4) in which it was found that the dummy *zijn* is used in the early period of language acquisition and, as its use decreases, the dummy *gaan* increases and eventually takes over. The sporadic constructions produced by very young children, in which the dummy *zijn* precedes the dummy *gaan* or a modal in the same utterance (see examples 7 and 8) provides support to this claim. These children produced, in parallel with these constructions, a considerable number of utterances with the dummy *gaan*. This suggests that, in those cases, the dummy *zijn* was not yet completely suppressed, but was on the way to disappearing from those children's language variety.

The finding that the L1 language background of the bilingual children (see research question 4) does not influence the choice of dummy auxiliary corroborates Julien et al's. (Chapter 3 and 4) results that revealed that L1 language background does not have a significant effect on dummy choice by adult DAL learners nor by TD bilingual children. This strongly supports the hypothesis that dummy choice is primarily determined by target language input (see Blom and De Korte, 2011; Julien et al., chapters 2 and 3; Van de Craats, 2009; Verhagen, 2009; Zuckerman, 2001). However, this finding contradicts the results of studies like Van de Craats and Van Hout (2010) in which it was found that L1 determined which dummy auxiliary was used. A conceivable explanation for the discrepancy in the findings is that there is indeed some L1 interference. As explained in 1.2.3, Moroccan Arabic has a real auxiliary (*ġadi/ġa*+IMPRF), which is very similar to the auxiliary *gaan* in Dutch regarding form and meaning. This may have caused the Moroccan participants in Van de Craats and van Hout's study to abandon the '*is*-stage' and reach the dummy *gaan* stage earlier than the Turkish participants. As a consequence, the '*is*-stage' of the Moroccan learners was not captured in that study, leading the authors to the conclusion that Moroccan learners select dummy *gaan* and the Turkish learners select dummy *zijn*. Support for this hypothesis can be found in Verhagen (2009). In that study, although Moroccan and Turkish learners showed a remarkably similar developmental path in the acquisition of morphosyntactic finiteness in Dutch, some differences between the two language groups were found. The Moroccan learners made more frequent use of 'light verbs', in particular *gaan* and auxiliary verbs, than did the Turkish learners. The Turkish learners produced *zijn* more often.

The next question we posed (research question 5) was whether use of dummy auxiliaries increases as morphosyntactic demands increase. It was hypothesized that

morphological demands increase when having to inflect the verb in the past tense, syntactic demands increase when having to produce sentences with inversion and morphosyntactic demands increase when having to inflect irregular and particle verbs. Effects of tense, inversion and verb type were found.

In the past tense condition of the Morphology task, the monolingual children did not show higher percentages of dummy auxiliary use. The percentages of the dummy auxiliary *gaan* were approximately the same in both the present and the past conditions for all age groups except for the VY-bilinguals and the O-bilinguals. In this condition, the VY-bilinguals did not use dummy auxiliaries and the O-bilinguals used more dummy auxiliaries in the past than in the present. In fact, the only group that behaved as expected was the group of O-bilinguals. They indeed used considerably more dummy auxiliaries in the past than in the present tense. Parallel to this increase in dummy auxiliaries, there was also a considerable increase in (correctly and incorrectly) inflected lexical verbs in the past tense. In fact, their percentage production of correctly inflected lexical verbs was almost equal to that of the O-monolinguals, but they had lower percentages of incorrectly inflected verbs. The results suggest that the monolingual children did, indeed, use dummy auxiliaries while learning past tense inflection and were already abandoning the 'dummy *ging* stage' (evidenced by the steadily decreasing percentages of *ging*+INF as the children grew older). The bilinguals on the other hand, being on average 2;6 years behind the monolinguals in terms of LoE, showed the expected increase in dummy auxiliary use. We can thus conclude that there is an increase in dummy auxiliary use when past tense inflection begins to be learned, but this phase was not captured in the monolingual group in this study.

In the Syntax task, as expected, the number of dummy auxiliaries increased significantly in the inversion condition. We should recall that the inversion condition is considered more difficult, because sentences with inversion require one more syntactic step to move the lexical verb into V2-position than do sentences with no-inversion. Our finding substantiates those of Blom and De Korte (2011), De Jong et al. (2013) and Julien et al. (chapter 4). All those studies contend that increased syntactic complexity puts an additional load on children's processing capacity; main clauses, just like inverted sentences, are assumed to be syntactically more complex than dependent clauses and sentences with a no-inversion order. This processing load leads to more errors with verb inflection and more dummy auxiliaries. Yet, the conclusion that SLI children use dummy auxiliaries as a way of coping with the increased syntactical difficulty requires some caution, because, analysis at individual

level shows a large variation among the children. Even though most children in the present study used more dummy auxiliaries in the inversion condition, there was also a considerable number of children who used dummy auxiliaries equally often in both conditions and, surprisingly, some of them used more dummy auxiliaries in the no-inversion than in the inversion condition. Furthermore, in De Jong et al's (2013) study, some children used as many dummy auxiliaries in the less complex condition as in the more complex condition. These cases should make us question the notion of an extra processing load when producing inflected lexical verbs in syntactically more complex conditions. The explanation offered by De Jong et al. (2013) for the different behaviour exhibited by some children is that these children may have a genuine inflectional deficit and their use of dummy auxiliaries is driven by morphological rather than by syntactical economy. However, this hypothesis does not hold true for the data in the present study as most of the nine children who used more dummy auxiliaries in the no-inversion than in the inversion condition, did not have problems with inflection. Six of the nine children scored between 58.8% and 100% in the present tense condition of the Morphology task. Only three of the nine children appeared to have problems with inflection. One produced mainly infinitives (10 times = 29.4%) and the dummy auxiliary *gaan* (11 times = 32.2%); the second produced the dummy auxiliary *gaan* (47.1%) almost as often as the finite verb (41.2%); and the third produced the dummy *zijn* in 24 out of 34 utterances (70.6%). A deeper examination of the utterances produced by the children who used more dummy auxiliaries in the no-inversion condition reveals that most of them, with the exception of two VY-bilinguals, inflected regular and irregular verbs correctly, but resorted to the use of dummy auxiliary with particle verbs. Given that a particle verb is moved when inflecting but that only part of the verb is moved while its particle remains at the end of the sentence, it is not unthinkable that this operation requires extra processing load, leading to more dummy use with this type of verbs than with other types. Hence, the cause of the difficulty lies at the interface of morphology and syntax: the combination of inflection and movement may cause difficulty. This leads us to the next effect, that of verb type.

The results indeed show an effect of verb type on dummy use in the present tense condition of the Morphology task and in both conditions of the Syntax task. Particle verbs elicit significantly more dummy auxiliaries than the regular and the irregular verbs. The only condition where an effect of verb type is not seen is the past tense condition, possibly because past tense inflection is difficult in itself, independently of verb type.

Regarding differences between regular and irregular verbs, we should recall that it was hypothesized - based on previous studies (Blom and Paradis, 2013; Jacobson and Schwartz, 2005; Paradis, Nicoladis and Crago, 2007; Rispens and De Bree, 2014) in which it was found that irregular verbs are more difficult to inflect than regular verbs - that irregular verbs would elicit more dummy auxiliaries than regular verbs. No sound justification was found for this hypothesis. Regular verbs did not differ significantly from irregular verbs in any of the conditions.

The final question (research question 6) concerned the effect of verb class on dummy auxiliary use. A tendency was observed for a few internal and external stative verbs to elicit fewer dummy auxiliaries than verbs belonging to other verb classes. This is a finding that corroborates that of earlier studies (see Jordens, 1990; Julien et al., chapters 2 and 3; Schlichting, 1996; Wijnen, 1995b). Besides this tendency, no clear influence of semantic aspect on dummy auxiliary use was found.

5.6. Concluding remarks

Dummy auxiliaries, particularly *zijn* ('be') and *gaan* ('go') are used by SLI children acquiring Dutch as a first and second language prior to productive use of the finite lexical verb in V2 position. The construction *gaan*+INF is used extensively without its prospective meaning. Comprehension of the prospective meaning of *gaan*+INF is incomplete even after 8 years of exposure. It can be concluded that, in the acquisition of prospective aspect in Dutch, form clearly precedes meaning.

The present study reveals that the most frequent error produced by the SLI children is the *use of dummy auxiliaries*. This does not corroborate the results of Bastiaanse et al's study (2002) in which it was found that SLI children mostly make *word order errors*, producing finite lexical verbs in verb final position. Zwitserlood (2015) also reports *word order errors* besides *omission, substitution* of inflection, and *dummy auxiliary* use as frequent errors produced by SLI children. Because in these two studies the errors produced, and the trajectory of acquisition, differ between the TD children and the SLI children, these two studies provide support for theories that state that SLI is deviant from TD development. Two other studies (Orgassa, 2009 and De Jong et al., 2013) report that most errors produced by SLI children are *RIs*, *omission, substitution* of inflection and *dummy auxiliaries*. Orgassa (2009) and De Jong et al., (2013) propose that the underlying problem of SLI children is processing overload related to verb movement. Both TD and SLI children make the same errors and use dummy auxiliaries as a strategy to avoid the additional

processing load for using inflection in main clauses, but the SLI children produce errors and dummy auxiliaries more often. Their results provide evidence for a delayed rather than a deviant development of SLI children. The present study provides support to this conclusion. The present study has also revealed that even though *RIs*, *omission of inflection (i.e., stem instead of inflected form)* and *incorrectly inflected finite verbs (substitution)* are among the most frequent deviant forms, dummy auxiliaries are the most frequent error produced by these children.

The striking difference among the various studies mentioned above is an absence of the use of the dummy auxiliary by SLI children in Bastiaanse et al.'s (2002) study. Interestingly, Bastiaanse et al. suggest that the difficulty SLI children have with moving the verb leads to keeping the inflected lexical verb at final position, while Zwitserlood (2015) proposes that it leads to extreme use of dummy auxiliary, which provides them with more time to retrieve the correct verb form. In Bastiaanse et al's study, lexical retrieval is not a very plausible explanation, since in that study the verb is given in the stimulus utterance. A conceivable explanation is that the SLI children in Bastiaanse et al's study know, just as the adult grammatical aphasics, the meaning of *gaan*+INF and therefore, the use of dummy strategy is not an option for them. We should recall that the SLI children in that study were older than the TD children (mean age 6;2; range 4;10-6;11) and probably already knew the inchoative meaning of *gaan*+INF. In Zuckerman's studies (2001; 2013) TD children growing up in Groningen already showed an understanding of *gaan*+INF at age four. Hence, the only option open to them is the use of another construction that is allowed in the Dutch language, though only in embedded sentences, the SOVFIN. This hypothesis is supported by the finding in Bastiaanse et al. (2002) that TD children acquiring Frisian (a language with V2 in the matrix clause, just like Dutch) in which the *Aux*+INF construction is not allowed, produce the same errors as the Dutch agrammatic speakers and the SLI children: SOVFIN in the matrix clause.

In sum, the results of all the above mentioned studies report five main types of errors (*RIs*, *omission, substitution, word order* and *dummy auxiliaries*), some of them resulting from two 'strategies' (use of dummy auxiliaries and leaving the finite verb in main clauses in verb-final position) which can be characterised as avoidance of movement, and also, in the case of dummy auxiliaries, of inflection of the lexical verb. Hence, the source of the problem seems to be at the interface of syntax (i.e. verb movement) and morphology (i.e. inflection).

Finally, the finding in the present study that the dummy auxiliary construction with the dummy *gaan* - a semantically incorrect but grammatically correct

construction - is the most frequent error, indicates that symptoms of SLI should not only be sought in grammatical errors in language production, but also in the use of correct constructions without the meaning ascribed to them in the standard language. This calls for caution when making judgments about SLI, since deviant forms or deviant uses may have their origin in various interfaces. In the case of the dummy *gaan,* the interface involved is between semantics and morphosyntax.

6. Conclusion and discussion

The central question of this study was whether dummy auxiliaries play a role in the acquisition of finiteness in Dutch, and what that role is. A corpus study on spontaneous speech data of Dutch monolingual children aged 1; 6 to 3;6 years was carried out and was followed by three experimental studies consisting of four tasks (seven conditions) which were administered to five groups of participants: adult DAL learners aged 21 to 54 years, typically developing monolingual and bilingual children aged 3;6 to 7;9 years, and monolingual and bilingual SLI children, aged 4;1 to 9;7 years.

The starting point for this study was that, up to that point, the comprehension and production of (dummy) auxiliaries by the above-mentioned groups had been studied, but some issues remained unclear, and our knowledge about dummy auxiliaries - their origin and role - was still limited. Furthermore, it has been suggested that the extreme and prolonged use of dummy auxiliaries could possibly be a marker of SLI in Dutch (e.g. De Jong et al., 2013; Orgassa, 2009; Zwitserlood, 2015). However, our understanding of the dummy auxiliary phenomenon and its role in the acquisition of Dutch is not sound enough to allow firm conclusions regarding its applicability as a diagnostic marker of SLI. Therefore, the goal of the present study was to gain more insight into the development of verb inflection in Dutch with a particular focus on the use of dummy auxiliaries by different groups of learners.

In this final chapter we start by focusing, in section 6.1, on six main conclusions related to our main research questions, which were addressed in the preceding chapters. In the next section (6.2), the trajectory of development of finiteness in the different types of language acquisition will be discussed and placed within the ongoing debate on the role of dummy auxiliaries in language acquisition. Based on the findings in chapter 5 and a comparative overview of error types and dummy auxiliaries in Dutch studies on child language acquisition (see Tables 11 through 15 in this chapter), it will be argued in section 6.3 that the patterns observed in SLI children can be explained by accounts that posit that SLI children have a deficient processing capacity, and possibly also, deficient performance systems rather than shortfalls in the representation of grammatical rules (see 1.2). Deficient processing capacity causes delay in language development, whereas representational shortfalls result in deviant patterns of development. In section 6.4 the developmental path of Dutch language acquisition, in particular of dummy auxiliary use, will be outlined. The next two sections deal with implications for diagnosing SLI (6.5) and

implications for language teaching, language therapy and language policy on bilingualism (6.6). The chapter ends with suggestions for further research (6.7).

6.1. Six main conclusions

Conclusion 1. Dummy auxiliaries are used by all groups participating in this study.

The corpus study (chapter 2) revealed that different dummy auxiliaries do not appear simultaneously and are not used to the same extent, suggesting that they may play different roles in the acquisition of finiteness. The (dummy) auxiliaries *zijn* and *gaan* and the modals are pioneers in the early phase of language acquisition, and they are the auxiliaries that are most frequently used by all five children who were part of the corpus study (chapter 2). The auxiliary *gaan* and the modals seem to be bootstrapped by language input, since all of them are permitted and regularly used in adult standard Dutch. The dummy auxiliary *gaan* – the most frequently used dummy – is, in addition, stimulated by child-directed speech (Klein, 1974). For most children, the dummy auxiliary *zijn* appears approximately one or two months later than the modal+INF and *gaan*+INF, and could be an overgeneralization of that construction. It is plausible that the copula *zijn*, being so prominent in the Dutch language, and also in the language of young children, triggers the use of the dummy *zijn*.

The results of the experimental studies corroborate the corpus analysis. They reveal that all five groups of participants used dummy auxiliaries: in particular, the dummy *zijn* and the dummy *gaan.* However, the individual variation was large. Although all participants used dummy auxiliaries*,* some used them only twice and others used them more than 100 times. This individual variation was seen across the different conditions used in the experiments: the majority of the participants used dummy auxiliaries only in two or three of the seven conditions; some used them across all conditions and a few used them in only one.

The dummy auxiliary *doen* was used less often by all groups in all four studies (chapters 2 to 5) covered in this thesis than the dummies *zijn* and *gaan*. It can, therefore, be assumed that its role is less significant in the acquisition of finiteness. The fact that only a few participants used this dummy relatively often, while the other participants barely used it, suggests that environmental factors, such as dialectal differences, rather than learners' attempts to cope with the language system, play a role in the use of this dummy auxiliary.

Conclusion 2: In the initial stages of language acquisition learners do not assign meaning to the constructions *zijn*+INF and *gaan*+INF.

Given the results of previous studies (Verhagen, 2013; Zuckerman, 2001; 2013), it was predicted that participants in the beginning of the acquisition process (the adults at or below A1 proficiency level and the very young bilinguals) would assign default or present tense meaning to *gaan/zijn*+INF. This prediction was confirmed for all groups. A surprising outcome was that not only beginning learners, but also the more advanced ones, ascribed imperfective (ongoing) meaning to *zijn*+INF as well as to *gaan*+INF. Sometimes, the construction *gaan*+INF was also associated -particularly by the participants with the longest LoE- to the picture portraying prospective aspect, suggesting some understanding of the prospective meaning of that construction by those participants. However, none of the groups reached percentages higher than 50% target responses in the prospective condition of the comprehension task. This shows that understanding of the construction *gaan*+INF remains limited even after several years of exposure. For learners at the early stages of language acquisition, the meaning of *gaan*+INF is underspecified, probably because it is often ambiguous. As most of the participants assigned a default meaning to the construction *zijn+INF,* we can conclude that it also takes learners a long time to understand that this construction does not express imperfective aspect.

In addition, the observation that all groups of participants used the dummy auxiliaries *zijn* and *gaan* in all three conditions in the Narrative task - often combined with lexical means, such as *straks* ('soon'), *nu* ('now') and *al* ('already') - reinforces the idea that the participants primarily used those lexical means to express tense and aspect because, at this stage, *gaan*+INF and *zijn*+INF are truly meaningless to them.

Conclusion 3: The level of language proficiency in Dutch (adult DAL learners) and the length of exposure (children) affect the use of dummy auxiliaries.

It was predicted that the level of language proficiency in Dutch and LoE would influence the use of dummy auxiliaries. The results of the adult learners, as well as those of the TD and the SLI children, reveal that their proficiency level and LoE did indeed influence the use of dummy auxiliaries. Nevertheless, this was not equally evident in all tasks or in all groups.

In the study of the TD children, as expected, no significant difference was found between VY-monolinguals and Y-bilinguals (we should remember that these two groups had the same LoE to Dutch) in the Narrative and in the Morphology tasks, and a significant difference was found between VY-monolinguals and the VY-bilinguals (we should remember that the latter had approximately two years less exposure to Dutch). The VY-bilinguals used more dummy auxiliaries than the VY-monolinguals. Surprisingly, in the imperfective condition of this task, the two bilingual groups did not differ significantly from each other. Even though they also had approximately two years difference in terms of their LoE, they produced equal percentages of dummy auxiliaries (around 45%). In the past tense condition of the Morphology task, an unforeseen pattern was also observed: the VY-monolinguals and the VY-bilinguals did not differ significantly from each other (these two groups also differed approximately two years in LoE). The VY-monolinguals produced a statistically insignificant higher percentage of dummy auxiliaries (43.9%) than the VY-bilinguals (38.5%) and the Y-bilinguals (22.8%). In the Syntax task, no significant effect of LoE on the use of dummy auxiliaries was observed. Despite this absence of significant effects, a tendency for an effect of LoE was seen in all conditions. The pattern observed was that the children with more exposure to Dutch (the VY-monolinguals and the Y-bilinguals) produced fewer dummy auxiliaries than the children with less exposure (the VY-bilinguals).

In the study of SLI children, the expected decrease in dummy auxiliary use as the children get more input in Dutch was observed in the present tense condition of the Morphology task, as well as in both conditions of the Syntax task. In the Narrative task, no significant main effect of LoE was found, although there was a tendency for the dummy auxiliary to decrease with LoE. In the past tense condition of the Morphology task, a clear effect of LoE was found only in the monolingual group. Instead, the bilinguals showed an increase of those auxiliaries. As discussed in section 5.4, a plausible explanation for this finding is that the bilinguals, having had approximately 2;6 years less exposure than the monolinguals, had reached, in this period, the phase in which *ging*+INF was increasing. The monolingual groups, on the other hand, were already in the phase in which dummy auxiliary use was starting to decrease. Unfortunately, this phase was not captured in this study for the bilingual children because the oldest children had only had seven years of exposure. The prediction is that the bilingual group will follow the same pattern as the monolingual group, and decrease their dummy auxiliary use in the next period.

In the Syntax task, the TD and the SLI children seemed, at first sight, to differ from each other. While the TD children showed no significant effect of LoE on the use of dummy auxiliaries, the SLI children did. The explanation we offer for this observation is that the TD children would also have shown a significant difference in this task if that study had included children with a longer LoE, as was the case in the SLI study. The greatest decrease in the use of dummy auxiliaries in the SLI group was seen in the group with the longest LoE, namely 6 to 8 years of exposure. This period was not captured in the TD study, since the group with the longest LoE had approximately 4 years of exposure. A look at Tables 5-9 and 5-10 in chapter 5 clarifies and supports this explanation. We can conclude that, in both TD and SLI studies, there is a decrease of dummy auxiliaries which goes hand in hand with the increase of LoE (Figure 6-2 illustrates this relationship between dummy auxiliary use and LoE in TD and SLI children).

In the study on adult DAL learners, the A2 participants showed a decrease in the use of both dummies across all tasks. However, that effect was statistically significant only for the dummy *zijn*. In the Narrative task there was a significant effect and in the completion tasks there was a nearly significant effect of proficiency level on dummy auxiliary use for the dummy *zijn*, but not for the dummy *gaan* (A1 more dummy *zijn* than A2) (see chapter 3). We can thus conclude that the level of language proficiency in Dutch (adult DAL learners) and the length of exposure (children) affect the use of dummy auxiliaries.

The differences among the tasks and groups may be caused by differences in elicitation procedures and task demands. It is plausible that, in more complex tasks, the decrease in dummy auxiliary use is less obvious, because even learners with a better command of the language still resort to dummy auxiliary use in those tasks. The Narrative task is the most taxing of all tasks, because learners not only have to deal with morphological, syntactic and semantic issues, but also with tense and aspectual issues. In addition, this task is not very controlled. That is to say, learners have to formulate whole sentences without a restricted sentence frame. In the sentence completion tasks, only a single word or a few words have to be inserted in a predefined slot. Plausibly, this puts less demand on processing capacities, and allows the learner to show his or her control over the construction being tested. This, in turn, reveals the effect of LoE more clearly.

It is appropriate to make one observation at this point. Length of exposure does not seem to be the only factor influencing target scores and the rate of reduction of dummy auxiliaries in children. Despite having had the same LoE, and therefore the

expectation that they would behave similarly, the Y-bilinguals used more dummy auxiliaries than the VY-monolinguals. Moreover, the Y-bilinguals did not differ significantly from the bilingual children with approximately two years less exposure (the VY-bilinguals). Conceivably, the amount, frequency and quality of exposure - variables that were not possible to measure in the present study - may also have played a role and contributed to these results. A number of studies correlating morphosyntactic accuracy and input suggest that length as well as richness of input positively affect the acquisition of the L2 grammar (Cornips and Hulk, 2008; Unsworth, Argyri, Cornips, Hulk, Sorace and Tsimpli, 2012). One fact worth pointing out, and that may complement our postulation and help explain the absence of significant differences among these groups in some of the conditions, is that most of the VY-bilinguals in this study had attended special Dutch language stimulation programs (see footnote 33, chapter 4) and probably had a greater amount and better quality of exposure to Dutch than the Y-bilinguals, who had probably not benefited as much from such programs[62].

Conclusion 4: The choice between the dummy *zijn* and the dummy *gaan* is brought about by length of exposure and proficiency level, not by language background.

The results of the various experimental studies show that length of exposure and proficiency in Dutch have an effect on the *choice* of dummy auxiliaries[63]. The fact that all groups of participants behaved similarly, and all used the same dummy auxiliaries, provides strong evidence for the hypothesis that first language does not influence the choice of dummy auxiliaries. Rather, dummy choice is primarily determined by target language input. From the language input, children and adult DAL learners infer that *zijn* and *gaan* carry agreement features and are placed in

[62] As of August 1, 2010 the 'Wet Kinderopvang en Kwaliteiteitseisen Peuterspeelzalen' (Act on Childcare and quality of preschools) came into force. Kindergartens were placed under the scope of this law. The law includes a system for monitoring and maintaining the quality of childcare facilities and playgroups, including the stimulation of language development. It also includes a scheme for compensation for the costs of child care, allowing parents with less financial means to benefit from preschool care and education. Lack of financial means may have been a reason for parents not to place their children into such programs in the past.

[63] Length of exposure (LoE), the measure we used for children, could not be applied to adults. We considered LoE an adequate 'measure' for children because most children start attending nursery around age 2.6 and this is followed by the primary school from age four onwards. Their exposure to Dutch is therefore more homogeneous than that of the adult DAL learners, whose length of residency (from 0.7 to 33 years) and length of instruction in Dutch (from 0.5 to 4 years) varied enormously. For this reason we chose to use level of proficiency in Dutch, according to the CEFR, as the measure to estimate the stage of language acquisition adults were in.

V1/V2 position in the sentence and that they may be combined with the lexical verb, which may be left in the infinitive and in final position. This finding corroborates that of other researchers like Blom and De Korte (2011), Van de Craats (2009), Verhagen (2009) and Zuckerman (2001).

In all three production tasks, the groups of VY-children (bilingual and monolingual) and the A1 level adults were the groups that used the dummy construction *zijn*+INF the most often. These results corroborate those of the analysis of the corpus of monolingual children (chapter 2) in which it was found that, in the early stage of language development, monolingual Dutch childrenused the construction *zijn*+INF during a period ranging from 9 to 17 months. After this period, this dummy auxiliary faded out. In the groups of adult DAL learners and SLI children there were a few isolated cases of extreme, almost exclusive, use of the dummy *zijn.* In the study of TD children these extreme cases were not found.

These findings provide support for the idea proposed by Julien et al. (chapter 2), that the dummies *zijn* and *gaan* can be seen as the *pioneer* dummy auxiliaries in the acquisition of finiteness in Dutch. The dummy auxiliary *zijn,* in particular, distinguishes itself from the other dummy auxiliaries in that its use renders an ungrammatical utterance. This may explain why this dummy, in contrast to the dummy *gaan*, disappears relatively quickly in typical language acquisition.

As a matter of fact, the results of the present study reveal a dummy stage with two phases within it: an initial phase in which the dummies *zijn* and *gaan* are both used, and a subsequent phase in which the occurrence of the dummy *zijn* diminishes while the dummy *gaan* keeps being used. In the transition phase, both dummy auxiliaries are sometimes evidenced in the same utterance and probably in the same functional head. The SLI children, as well as the adults, produced utterances such as those in (1). This combination of the dummy *gaan* preceded by the dummy *zijn* was not evidenced in the TD groups.

(1)	*Pingu*	*is*	*gaat*	*eten*
	[IP Pingu	[I' [I be.PRES.3SG]	[I go.PRES.3SG]	[VP eten.INF]]]
	'Pingu eats/is eating.'			

Van de Craats (2009: 77) gives a similar example, shown in (2), and explains the occurrence of two inflected verbs in I position as follows '… the inflected form has raised and adjoined to the head of IP/AgrP, whereas *is* has not yet been deleted or incorporated in the thematic finite verb form (ligt 'lies')'.

(2) *Zij is ligt$_j$ in de boot* [VP t$_j$] (Target: *Zij ligt in de boot*)
She is lies in the boat.
"She is lying in the boat."

Van de Craats' interpretation of such utterances fits well within Zwart's analysis (see chapter 3, example 1). The example above, '*Pingu is gaat eten'*, differs from Van de Craats' example in that in this case there is no movement of the lexical verb. However, both examples reflect two phases in the development: in the first phase the dummy *is* is inserted in I and in the second another dummy auxiliary (1) or an inflected lexical verb (2) is inserted in the same functional head before the dummy *is* has been deleted.

Although no significant effect of language background on dummy choice was found in the present study, the results suggest that positive transfer may have been responsible for the higher target scores of the Moroccan Arabic learners than the other two groups on the prospective condition of the narrative experiment. This confirms the prediction that the *ġādi* ('go') +IMPRF construction in Moroccan Arabic would facilitate the acquisition of the correct use of the *gaan*+INF construction in Dutch by the speakers of Moroccan Arabic (see 3.1.3).

Conclusion 5: The use of dummy auxiliaries increases as morphosyntactic demands increase.

As predicted, the past tense condition of the Morphology task and the Inversion condition of the Syntax task prompted lower target scores and more dummies than the present tense and the no-inversion conditions in all children's groups. However, the effect of morphosyntactic complexity on dummy auxiliary use in these two tasks was not seen in the adult DAL learners.

In the past tense condition, adult DAL learners used dummy auxiliaries sporadically (see Table 3-5). Instead, they opted for the use of bare past participles. The percentage of bare participles rose from 8.4% at level A1 to 54.6% at level A2. It is conceivable that adult DAL learners see the prefix '*ge-*' as a marker of past tense, and therefore do not see the need for dummy use. As explained in 1.4.1, past participles have been evidenced in the language of monolingual children aged between about 18 and 24 months. It is plausible that bare participles are an early form of expression of past tense in various types of language acquisition or learning. The bilingual children in the present study may have gone through this phase as

well, but, because they have already had two years or more of exposure to the target language, they may have already surpassed it.

In the Syntax task, the number of dummy auxiliaries in the inversion condition hardly differs from that in the no-inversion condition. A closer look at the utterances produced with a dummy auxiliary in the inversion condition showed that the underlying syntactic structure was the same as in the no-inversion condition, resulting in V3 constructions with the structure [IP *hier* [IP subject [I' *is* [VP *lopen*]]]] (see 3.5). Adult DAL learners, at these two language proficiency levels, did not seem to realise that the presence of an element in sentence initial position requires the verb to move one step up. That may be the reason why they do not use inversion.

Children, on the other hand, showed an effect of complexity in both the Syntax task and the Morphology task. In the Syntax task most children produced inversion and used more dummy auxiliaries in that condition than in the no-inversion condition. In the past condition, children showed an increase in the use of dummy auxiliary as soon as they realized that the dummy can carry the past tense feature (*ging*+INF).

The finding that morphological and syntactic complexity leads to more dummy use in children - a conclusion that corroborates Blom and De Korte's (2011) and De Jong et al.'s (2013) findings - but not in adult DAL learners, raises the question 'What accounts for this lack of an effect of morphosyntactic complexity in dummy auxiliary use in adults?'

Differences between adult L2 learners and TD monolingual and bilingual children in verb placement and inflection are generally interpreted as an effect of age and are linked to the critical period hypothesis: the idea being that some principles of the Universal Grammar become inaccessible after a certain age and therefore adult L2 learners, unlike child learners, have to rely on other general learning mechanisms.

The results of the present study suggest that differences between children and adult DAL learners may also be due to differences in exposure. Adult DAL learners have not yet had the exposure to the target language needed to become sensitive to the morphological or syntactic complexity in respectively past tense inflection and inversion rules. This should not be surprising, since the length of instruction adult DAL learners have received ranges from 0.5 to 6 years (see Table 3-2). Moreover, the exposure to Dutch that most adults have is limited to what they learn and practice in the lessons. Children, on the other hand, have more - and qualitatively,

probably better - exposure to Dutch (see footnote 34 in 4.2.1) than adult DAL learners. Support for this argument comes from the results of the very young bilingual SLI children. This group of children, just as adult DAL learners, do not use dummy *ging*+INF to express past as much as the children with more exposure (see Table 5-4) or as much as the TD children with the same amount of exposure (see Table 4-5). A second finding that supports this line of thought is that the very small number of children (seven SLI and five TD) who show a difficulty in producing inversion are children with the least exposure to Dutch (approximately two years).

Because the groups with the least exposure to Dutch show a very similar error pattern, despite different ages of onset and different L1s, we consider that these findings fit well within what we will call 'the *exposure threshold hypothesis'*: the threshold of exposure needed to acquire language varies depending on the structure being learned. Some structures require more input than others (Gathercole, 2002). In Dutch, the threshold for past tense inflection and for realization of inversion seems to be higher than that for present tense inflection and for main clauses.

The hypothesis of an exposure threshold could help to explain why adults often stagnate at a certain stage, while bilingual children eventually catch up with monolingual children. Many adults never get the exposure needed in order to reach the threshold for certain constructions. Children on the other hand, due to contact at school and in the playground, are more exposed to the target language than adult DAL learners. Other factors, such as motivation, quality of instruction and interference from the languages they acquired earlier, need also to be taken into account when explaining fossilization in the case of adult DAL learners. The fact that some adult participants at level A2 produced inversion and inflected the verb in the past provides evidence that some adults did reach the threshold of language exposure needed to master these more complex constructions.

Blom and De Korte (2011) and Orgassa (2009) carried out two Dutch studies worth mentioning at this point, since they investigated verb placement and inflection in L2 child (SLI and TD) and adult learners of Dutch, but interpreted the results, which were very similar to those in the present study, differently.

Orgassa (2009) made comparisons involving monolingual TD four year olds, monolingual SLI seven year olds, bilingual TD and SLI seven year olds and adult bilinguals. She found that children (monolingual and bilingual, SLI and TD) rely on the same system underlying verb placement rules. They all reached relatively high scores in positioning the finite verb. In contrast, L2 adults were shown to have severe difficulties in applying the V2 rule. They not only had lower accuracy rates,

but they also overused an SVX template, an error rarely seen among the child groups. Orgassa concluded that the differences between child and adult learners could be interpreted in terms of age effects in the application of the V2 rule (see 1.5.3): in other words, due to an inaccessability to Universal Grammar, as previously proposed by various scholars (e.g., Bley-Vroman, 1990; Blom, 2008; Clahsen and Muysken, 1986), or in terms of limited access to the procedural memory systems (e.g., Ullman, 2001).

Blom and De Korte (2011) matched 6-year-old L2 children with L2 adults, holding L2 proficiency constant across children and adults. They came to the conclusion that the difficulty and different use of dummy auxiliaries between children and adults is not related to differences in proficiency. According to the two authors, the fact that the majority of the children successfully varied the position of the verb, depending on clause type, shows that they had access to Universal Grammar, and had fully-fledged syntactic representations that include not only a V position but also the functional positions AGR, TNS and C. Adults, on the other hand, use one single word order irrespective of clause type, suggesting the availability of only one structural position for the verb, V, and the unavailability of the functional position AGR, TNS or C. Blom and De Korte (2011) do not provide a conclusive explanation for the observed different behaviour of adult L2. According to them (2011:915-16): 'We argued that differences in the syntactic representations of the L2 children and L2 adults in this study explain differences in the use of dummy auxiliaries… The adults in our sample may acquire Dutch in a similar way as the L2 children do, but represent an earlier developmental stage. This asymmetry may suggest that the syntactic development of the L2 adults is slower than the development of the L2 children, which, in turn, may be an effect of less exposure to Dutch in the adult group than in the child group.'

The results of the present study support the hypothesis that exposure may be the main explanatory factor for the differences between children and adults. Children at more advanced stages, having had more exposure to Dutch, show a correct command of inversion and past tense inflection, whereas adults, who in general have less input, progress much slower and even stagnate at the stage prior to that in which that command is reached. This conclusion could be reached because the present study investigated various stages of language acquisition, including a very early stage, which revealed similarities between children and adults that are no longer seen at a more advanced stage, which is the stage that the studies mentioned above investigated (six to seven year olds, that is, children who had had four or more years

of exposure to Dutch). The finding in the present study, that a few children with little exposure to Dutch show the same syntactic structure as the adult DAL learners (see above), in conjunction with the finding that some adult participants at level A2 produced inversion and inflected the verb in the past, provides evidence for the same *linguistic representation* in children and adults.

Conclusion 6: There is no clear effect of verb class on the use of dummy auxiliary.

Our findings in the corpora study (chapter 2), revealed that statives and resultatives were the first verb classes to be used in V2 position. Action verbs (mostly transitives) remained in sentence-final position until age 3;6. This effect of verb class was not found in the experimental studies. In the studies of TD and SLI children, a tendency was observed, particularly in the Morphology and the Syntax tasks, for stative verbs to elicit no or only a few dummy auxiliaries. This finding corroborates that of earlier studies (see Jordens, 1990; Julien et al., chapter 2; Schlichting, 1996; Wijnen, 1995b). However, no other effects were found. Dummy auxiliaries were similarly used with verbs belonging to diverse verb classes. Also in the study on adult DAL learners, dummy auxiliaries were used indiscriminately with all verb classes.

As discussed in chapter 1, stative verbs in Dutch do not allow the continuous constructions *zijn*+aan het+INF and *zitten/staan/liggen*+te+INF. The fact that not only the children in the corpus study but also the older children who participated in the experimental studies hardly ever used dummy auxiliaries with stative verbs shows their sensitivity to this constraint. Adult DAL learners did not show this sensitivity, since they use dummy auxiliaries indiscriminately with all verb classes, regardless of their semantic constraints. A conceivable explanation for the absence of any effects in the study of the adult DAL learners may be their limited exposure to the target language. The exposure adult DAL learners have is perhaps not sufficient to permit them to acquire sensitivity for this semantic constraint. Children, even bilingual children, probably acquire it because they have more contact with the target language. Schlichting (1996) has shown in her study that monolingual children's use of finite and nonfinite forms correlates highly and significantly with that of native adult speakers of Dutch (see 2.4.3).

The major query in this study was whether different groups of learners differ considerably in the way they acquire finiteness and whether dummy auxiliaries are

used differently by the various groups. The six conclusions given above already provide part of the answer.

What follows is a more systematic comparison among the groups in the present study (6.2) and between the present study and other studies on this subject (6.3).

6.2. A comparative overview of target responses and dummy auxiliaries among the various groups in the present study

We start this section with five Tables (6-1, 6-2, 6-3, 6-4 and 6-5) which show comparisons between the SLI and TD children in the present study. In order to have a better understanding of the differences between these two groups of children regarding their comprehension of the construction *gaan*+INF, Table 6-1 presents a comparison of percentages of target responses in the *gaan*+INF condition of the comprehension task.

Table 6-1. Percentages of target responses of TD and SLI children in the gaan+INF condition of the comprehension task.

	Monolingual						Bilingual					
	Very young		Young		Older		Very young		Young		Older	
Mean age & LoE	TD 4;6	SLI 4;9	TD	SLI 6;6	TD	SLI 8;0	TD 4;9 ± 2	SLI 5;2 ± 2	TD 6;8 ± 4	SLI 6;7 ± 4	TD	SLI 8;9 ± 6
Target responses	26.3	11.8	-	13.9	-	35.5	17.7	10.5	15.4	17.2	-	40.5

LoE = Length of exposure in years

Table 6-1 reveals that the very young, monolingual and bilingual, children reached higher percentages in understanding of the prospective aspect of *gaan*+INF than the respective VY-SLI children. Surprisingly, the Y-bilinguals did not show a difference between TD and SLI children. On the contrary, the Y-bilingual SLI children scored slightly higher than the Y-bilingual TD children. Even more remarkable is the fact that the O-bilingual SLI children scored higher than the O-monolingual SLI children. This should not be surprising, since even though they were all 8-year-olds, the bilingual children had approximately two years less exposure to Dutch. It does confirm the impression I had during the data collection that some of the bilingual SLI children probably were not language impaired. Hence, we can argue that a possible reason for this lack of difference between the Y-bilingual TD and the SLI children and between the O-bilingual and the O-monolingual SLI children is that not

all the bilingual children in the SLI group actually had SLI. As explained in chapter 1, diagnosing SLI in bilingual children is not easy and we should entertain the hypothesis that, despite the thorough diagnostic process involving various disciplines, some bilingual children are still misdiagnosed. The fact that bilinguals are overrepresented in schools for children with SLI (see 1.3.3) and the fact that in various conditions of the present study the Y-bilinguals and the O-bilinguals scored better than the monolinguals of approximately the same age support this hypothesis.

Table 6-2. Percentages of correct utterances given by monolingual TD and SLI children in the various conditions of the production tasks.

		Very Young		Young		Older	
Mean age		TD 4;6	SLI 4;9	TD	SLI 6;6	TD	SLI 8;0
Narrative	Prospective	28.2	19.2	-	40.2	-	49.3
	Imperfective	41.8	36.7	-	57.7	-	69.6
	Perfect	6.3	4.0	-	21.4	-	41.5
Morphology	Present	54.2	23.6	-	50.2	-	77.6
	Past	18.1	5.9	-	12.2	-	19.9
Syntax	No-inversion	45.8	24.3	-	42.9	-	71.0
	Inversion	36.1	9.5	-	36.6	-	59.9

The – sign means no data for this group

Table 6-3. Percentages of correct utterances produced by bilingual TD and SLI children in the various conditions of the production tasks.

		Very Young		Young		Older	
Mean age & LoE		TD 4;9 ± 2	SLI 5;2 ± 2	TD 6;8 ± 4	SLI 6;7 ± 4	TD	SLI 8;9 ± 6
Narrative	Prospective	42.3	16.4	35.1	23	-	46.2
	Imperfective	35.4	21.1	28.8	45.8	-	69.6
	Perfect	6.6	0.8	7.6	14.2	-	31.1
Morphology	Present	28.1	26.5	67.6	50.6	-	77.7
	Past	5.1	14.7	25.2	8.1	-	17.3
Syntax	No-inversion	32.7	20.5	66.9	45.5	-	77.0
	Inversion	14.5	4.8	51.6	30.3	-	55.0

The – sign means no data for this group
LoE = Length of exposure in years

Tables 6-2 and 6-3 present a comparison of percentages of correct utterances produced by respectively monolingual and bilingual TD and SLI children in the various conditions of the production tasks.

Table 6-2 shows that the very young monolingual SLI children scored lower in all conditions than the TD children of the same age. It can also be seen in this table that

the SLI children improved their percentages of correct utterances with age. Table 6-3 shows that the very young bilingual children showed a similar pattern to the monolingual children in the Narrative and the Inversion tasks, i.e., the SLI children produced lower percentages of correct utterances than the TD children. However, in the present tense condition of the Morphology task, the very young TD children and the very young SLI children produced similar percentages. In the past tense condition, the percentage of correct utterances produced by the SLI children was even higher than that of the TD children. The same happened with the group of young bilinguals, but in the Narrative task. The young bilingual children with SLI produced higher percentages of correct utterances than the TD children in the imperfective and perfect condition of the Narrative task. As explained above, in the discussion of Table 6-3, a possible explanation for the better performance of the bilingual SLI children is that they had been overdiagnosed. Some of these children may not have had SLI. It is plausible that the language therapy they received at the schools they attended helped them to discover the regularities of the second language more quickly than the bilingual TD children.

Tables 6-4 and 6-5 present the percentages of dummy auxiliaries produced by monolingual and bilingual TD and SLI children respectively in the various conditions of the production tasks of the present study.

Table 6-4. Percentages of dummy auxiliaries produced by monolingual TD and SLI children in the various conditions of the production tasks.

		Very Young		Young		Older	
Mean age		TD 4;6	SLI 4;9	TD	SLI 6;6	TD	SLI 8;0
Narrative	Imperfective	30.5	32.0	-	25.0	-	23.4
	Perfect	12.5	11.0	-	11.0	-	3.2
Morphology	Present	28.1	40.9	-	21.1	-	5.5
	Past	43.9	37.0	-	27.3	-	10.0
Syntax	No-inversion	22.9	33.0	-	25.2	-	8.7
	Inversion	32.3	44.6	-	28.0	-	10.4

The – sign means no data for this group

Table 6-4 shows that, in the Narrative task, the percentages of dummy auxiliaries produced by the very young monolingual TD and the SLI children are very similar. In the present tense condition of the Morphology task and in both conditions of the Syntax task, the SLI children produce, as predicted, more dummy auxiliaries than

the TD children. However, in the past tense condition, the SLI children produce less dummy auxiliaries than the TD children.

Table 6-5. Percentages of dummy auxiliaries produced by bilingual TD and SLI children in the various conditions of the production tasks.

		Very Young		Young		Older	
Mean age & LoE		TD 4;9 ± 2	SLI 5;2 ± 2	TD 6;8 ± 4	SLI 6;7 ± 4	TD	SLI 8;9 ± 6
Narrative	Imperfective	46.5	52.4	44.7	30.8	-	14.4
	Perfect	29.2	10.2	16.3	15.4	-	4.4
Morphology	Present	47.4	28.5	17.6	24.2	-	2.6
	Past	38.5	3.5	22.8	21.3	-	33.0
Syntax	No-inversion	32.3	28.5	12.7	16.8	-	6.1
	Inversion	50.0	29.8	24.4	24.4	-	7.5

The – sign means no data for this group
LoE = Length of exposure in years

Interestingly, the SLI children produced 18.5% *gaan*+INF and 18.5% *ging*+INF, whereas the TD children produced 43.9% *ging*+INF (see Tables 4-5 and 5-4). It is noteworthy that this same pattern of using the dummy auxiliary in both the present and the past tense in the past tense condition is seen in the bilingual groups. While the very young TD bilinguals used only *ging*+INF (38.5%)(see Tables 4-5), the SLI children of the same age inflected the dummy auxiliary in the present as well as in the past tense (1% *gaan*+INF and 2.5% *ging*+INF)[64]. The young TD bilinguals followed the same pattern: they used 22.8% *ging*+INF, whereas the young SLI bilinguals used 8.3% *gaan*+INF and 13% *ging*+INF (see footnote 3). It is not known how older TD bilinguals behave, because this group was not tested, but it can be seen that the older SLI bilinguals kept to the same pattern as the younger groups: that is, they used 0.3% *gaan*+INF and 32.7% *ging*+INF. This pattern suggests that TD children discover that *ging* carries the past tense feature earlier than SLI children and consequently let go of *gaan*+INF in the past context earlier than them. It could be said that SLI children are slower in perceiving that *ging* is a better dummy than *gaat* in past tense contexts.

That having been said, it is worthy of note that SLI children gradually diminish their use of *gaan* and augment that of *ging,* proving that they are able to learn to express past tense using the 'dummy strategy', albeit slowly. This provides evidence

[64] These percentages are not presented in Table 5-4 because that table contains only the three highest percentages of errors in each condition.

supporting the view that the language development of SLI children exhibits delay rather than deviance.

Tables 6-4 and 6-5 also reveal that, in some of the conditions, the percentages of dummy auxiliaries produced by the SLI children do not differ from those of the TD. This raises doubts over the significant differences between TD and SLI children regarding dummy auxiliary use, claimed in the literature (De Groot, 2016; De Jong et al., 2013; Orgassa, 2009; Zwitserlood, 2015). Table 6-4 shows that monolingual SLI children differed from TD children in dummy use in the Morphology and Syntax tasks, but not in the Narrative task. Table 6-5 shows that, in all the tasks, the VY-bilingual SLI produced fewer dummy auxiliaries than the bilingual TD children of the same age. This points to a delay in making use of the 'dummy strategy'. As can be seen, this delay disappears within the next two years, since the Y-bilingual SLI children no longer showed differences with the Y-bilingual TD children in their use of dummy auxiliaries, except for the imperfective condition of the Narrative task, in which they still used fewer dummy auxiliaries than the TD children.

We may conclude from these observations that the present study only partly supports the claim that SLI children use dummy auxiliaries more often than TD children (i.e., only in some conditions). Moreover, this observation applies only to the monolingual groups. The claim that SLI children use more dummy auxiliaries than the TD children cannot be made for the bilingual children. The very young bilingual SLIs produced fewer dummy auxiliaries than the TD children across all conditions and the young bilingual SLI children produced similar percentages of dummy auxiliaries to the TDs.

From the above, it can be hypothesized that use of dummy auxiliaries is a strategy used more effectively by TD than by SLI children. The SLI children show delay not only in learning (deriving) the underlying rules for producing correct utterances, but also in starting to make use of a strategy that helps circumvent the difficulties that the Dutch linguistic system presents. A comparison of all the bilingual groups in this study may shed some light on the question of age dependencies. Do adult DAL learners experience the same slow start in using dummy auxiliaries as SLI children? Do they exhibit a pattern of acquisition similar to that of the TD or the SLI children? Or do they show a pattern of acquisition that differs from both child groups? In order to try to answer those questions, Table 6-6 displays percentages of the most common ungrammatical and grammatical verbal utterances in the present study for all bilingual groups (i.e. bilingual TD children, bilingual SLI children and adult DAL learners).

The first key point in Table 6-6 is that, while the adult DAL learners and the SLI children show a decrease of dummy auxiliary and an increase in correct scores as proficiency and LoE grows, those percentages barely change in the case of the TD children. TD children seem to stagnate between two and four years of exposure. The table further shows that adult DAL learners produce, at both proficiency levels, considerably higher percentages of RIs than children (both TD and SLI). Omission of agreement marker (OAM) errors are higher in the adults and SLI children with more than two years of exposure than in the TD children with the same LoE. Substitution errors are rarely produced by any of the groups. The percentages of correct scores produced by the adults at A1 level are very low in all conditions of the narrative task, but the percentages increase considerably at A2 level. Surprisingly, the percentages of correct scores in the imperfective condition produced by the adults at A2 level and by the SLI children with 4 years of exposure are higher than that of the TD children with the same age and same years of exposure as the SLI children. In the perfect condition, the percentage of correct scores produced by the adults at level A2 is the highest of all groups.

Table 6-6. Percentages of morphological errors and correct constructions in the bilingual groups (narrative).

Julien et al. (Narrative task of the present study)							
Acquisition type	Adult	L2 TD	L2	Adult	L2 TD	L2	L2
Mean age		4;9	SLI		6;8	SLI	SLI
LoE/Proficiency level	A1	± 2	5;2 ± 2	A2	± 4	6;7 ± 4	8;9 ±6
Root infinitive	47.5	4.5	5.5	18.3	1.9	3.8	0.0
OAM (stem)	3.7	2.1	1.6	5.0	0.0	5.4	6.3
Substitution	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Dummy auxiliary	25.9/ 37.5	46.5/ 75.5	52.4/ 67.3	11.8/ 16.6	44.7/ 61	30.8 36.2	14.4/ 20.0
Correct prospective	6.5	42.3	16.4	24.3	35.1	23	46.2
Correct imperfective	11.0	35.4	21.1	52.2	28.8	45.8	69.6
Correct perfect	3.0	6.6	0.8	36.1	7.6	14.2	31.1

Note: The percentages of RI's, Omission of Agreement Marker (OAM) and substituted inflection in the present study concern only the imperfective condition, since this is the only condition that requires a finite lexical verb. Given that the use of the construction *gaan*+INF in the prospective condition is correct, the percentages presented in the row 'Dummy auxiliaries' correspond to the percentage in the imperfective condition, followed by the percentage in the imperfective and perfect conditions together.

Dummy auxiliaries were used much more extensively by the very young (TD and SLI) and young (TD) children than by the adults. This corroborates the results of studies such as those of Orgassa (2009) and Blom and De Korte (2011) in which it was also found that adults use dummy auxiliaries much less than children.

Interestingly, the percentages of dummy auxiliaries produced by adults at level A1 were very similar to those produced by the SLI children after four years of exposure, but much lower than that of the TD children with the same age and same years of exposure. The adults at level A2 produced approximately the same percentages of dummy auxiliaries as SLI children after 6 years of exposure. In the present study there were no bilingual TD children with more than 4 years of exposure, so it is not possible to compare these two groups with a group of TD children with the same LoE, i.e., six years of exposure. Assuming that the TD children with more exposure would follow the same pattern exhibited by the younger TD groups, it could be expected that the percentage of dummy auxiliaries would also be higher than that of the SLI children. However, it is also possible that the pattern changes after four years of exposure. Comparison with a group of TD with six years of exposure would clarify this issue.

In sum, the results presented on Table 6-6 show that adult DAL learners do indeed use dummy auxiliaries less often, and in the initial stage (A1 level) less effectively - as evidenced by the high percentages of infinitives and OAM errors and low percentages of correct scores - than the (TD and SLI) children. However, in a more advanced stage (A2 level), adults show a decrease in RIs and of dummy auxiliary use and an increase in correct scores. This finding indicates that the present adult DAL learners do not stagnate or fossilize at this stage of language acquisition. Moreover, the fact that they use higher percentages of dummy auxiliaries at A1 level than at level A2 shows that they use this strategy and gradually diminish its use, just as TD and SLI children do.

From Table 6-6 it can be concluded that, with the exception of the extreme use of infinitives in adults, the pattern of acquisition is the same among the various groups of learners, but the speed of decrease of dummy auxiliaries and increase in correct scores is much slower in the TD children between two and four years of exposure. This conclusion contradicts that reached by other researchers, who found higher percentages of dummy auxiliary use in the SLI children than the TD children and interpreted this overuse of dummy auxiliaries by the SLI children as a sign of delay or immaturity in grammatical development (De Jong, 1999; De Jong, Blom and Orgassa, 2013; Orgassa, 2009 and Zwitserlood, 2015). In order to clarify this difference between the present study and other studies, the next section compares and discusses a few relevant studies.

6.3. A comparative overview of error types and dummy auxiliaries in Dutch studies on child SLI language acquisition

Comparisons of the results of various studies on SLI children, and the SLI groups in the present study, will clarify the role of dummy auxiliaries in the acquisition of verb inflection and placement and will help explore the applicability of the findings to the process of diagnosing SLI in monolingual and bilingual children. We will consider not only the use of dummy auxiliaries, but also the occurrence of typical errors and target constructions.

Tables 6-7 and 6-8 display percentages of the most common ungrammatical and grammatical verbal utterances in the present and in recent studies, namely De Jong, Blom and Orgassa, (2013) and Orgassa (2009), Steenge (2006) and Verhoeven et al. (2011) and Zwitserlood (2015). A comparison with those studies is relevant because four of them investigated error patterns not only in monolinguals but also bilinguals (De Jong, Blom and Orgassa, (2013), Orgassa, 2009, Steenge, 2006 and Verhoeven et al., 2011); and one of them, Zwitserlood (2015), though having solely investigated monolingual SLI children, included the use of dummy auxiliaries. These and the present study use similar tasks, making the comparison more reliable. Table 6-7 shows percentages on (semi) spontaneous narrative tasks, and Table 6-8 concerns percentages on completion tasks.

Table 6-7. Percentages of morphological errors and correct constructions in three Dutch studies of monolingual and bilingual SLI children (narratives).

	1. Steenge (2006) & Verhoeven et al. (2011) Frog story 'Frog, Where Are You?'				2. Zwitserlood (2015) Picture Stories from the TAK[65] (Verhoeven & Vermeer, 2001)		
Acquisition type (mean age)	L1 SLI (7;5)	L2 SLI (7;3)	L1 SLI (9;5)	L2 SLI (9;1)	L1 SLI (6;5)	L1 SLI (7;4)	L1 SLI (8;5)
Root infinitive	0.8	1.0	2.5	4.6	0.1	0.1	0.1
OAM (stem)	8.6	12.8	4.0	6.5	4.4	4.0	1.5
Substitution	3.6	6.7	3.4	4.9	-	-	-
Dummy auxiliary	-	-	-	-	20.8	17.8	15.2

	3. Julien et al. (narrative task of the study) Extracts of Pingu films					
Acquisition type (mean age) LoE	L1 SLI (4;9)	L2 SLI (5;2) ± 2	L1 SLI (6;6)	L2 SLI (6;7) ± 4	L1 SLI (8;0)	L2 SLI (8;9) ±6
Root infinitive	10.7	5.5	1.1	3.8	0.0	0.0
OAM (stem)	5.1	1.6	7.7	5.4	3.1	6.3
Substitution	0.0	0.0	0.4	0.4	0.0	0.0
Dummy auxiliary	32.0/ 43.0	52.4/ 67.3	25.0/ 36.0	30.8/ 36.2	23.4/ 29.8	14.4/ 20.0
Correct prospective	17.0	14.8	31.7	23.0	18.0	46.2
Correct imperfective	26.8	21.1	54.0	45.8	68.8	69.6
Correct perfect	3.3	0.8	12.9	14.2	19.6	31.1

Note: The – sign means no data for this group. The percentages of RIs, Omission of Agreement Marker (OAM) and substitution of inflection (Substitution) in the present study concern only the imperfective condition, since this is the only condition that requires a finite lexical verb. Given that the use of the construction *gaan*+INF in the prospective condition is correct, the percentages presented in the row 'Dummy auxiliaries' correspond to the percentage in the imperfective condition, followed by the percentage in the imperfective and perfect conditions together.

Table 6-7 reveals that within the monolingual groups, the six- and eight-year-olds from Zwitserlood's and Julien et al.'s studies show similar percentages of *Root*

[65] TAK = Taaltoets Alle Kinderen (Language Assessment for All Children)

infinitives (RIs) produced by monolingual children aged 6;5 through 8;9 years. Julien et al.'s study shows that it is after age four that RIs diminish considerably. The *errors of omission of agreement marker* (OAM) are higher in the present study than in that of Zwitserlood's and do not show much decrease. A comparison of errors of substitution between these two studies is not possible because Zwitserlood mentions only *errors of agreement* without making a distinction between OMA and substitution errors. As for the use of dummy auxiliaries, the percentages produced by the six-year-olds in both studies are very close to each other (between 20.8 and 25.0%). The eight-year-olds differ more: the children in Zwitserlood's study used fewer dummy auxiliaries (15.2%) than the children in the present study (23.4%). It is striking that, in both studies, dummy auxiliaries in monolingual children decrease with age, but not considerably. The difference between the two studies, showing higher percentages of errors of omission and more dummy auxiliaries in the present study, can possibly be explained by the fact that the children in the present study are slightly younger (mean age 8 years, SD 4 months) than those in Zwitserlood's study (mean age 8.5 years, SD 2 months).

Comparison of a narrative task among bilingual groups is possible between the studies of Steenge (2006), Verhoeven et al. (2011) and Julien et al. (chapter 5). Table 6-7 shows that the percentages of *substitution errors* are much lower in the present study. It is striking that, while the eight-year-olds in the present study no longer used RIs, the nine-year-olds in Verhoeven et al.'s study still used 4.6% RIs. The percentage of *errors of omission* is approximately the same (around 6%) in the older groups: that is, the nine-year-olds in Verhoeven et al.'s study and the eight-year-olds in the present study. However, the younger children showed great differences: the seven-year-olds in Verhoeven et al.'s study produced far more *errors of omission* (12.8%) than the six-year-olds in the present study (5.4%). A possible explanation is that the children differed in terms of LoE to Dutch. In that study, most children started their structural exposure to Dutch when entering school and had not benefited from VVE programs (see footnote 36), whereas most of the children in the present study did so. A comparison of dummy auxiliary use is not possible because Steenge (2006) and Verhoeven et al. (2011) do not mention this error type.

A recent study (De Groot, 2016) of the narrative skills of 85 Dutch monolingual SLI children, based on narrations of the version of the 'Frog' story *Frog Goes to Dinner* by Mayer (1974), revealed that t-omission occurs for approximately 20% of young SLI children aged 5;6 - 7;5; approximately 18% of children aged 7;6 - 9;5

and approximately 10% of older children aged 9;6 - 12. These percentages are much higher than the percentages in the studies mentioned above. In De Groot's study, dummy auxiliary use was also quantified, and typically developing children were compared with SLI children. Both groups used dummy auxiliaries, but the percentage of dummy auxiliaries produced by the young SLI group was considerably higher (30%) than that in the typically developing children of the same age (slightly over 5%). The other two groups did not differ much from each other: the 7- to 9-year-old SLI children produced approximately 12% dummy auxiliaries while the TD children of the same age produced approximately 16% and the older children (both SLI and TD), aged 9 to 12 years, produced approximately 8% dummy auxiliaries.

It can be concluded from the above-mentioned studies that RIs, omission and substitution errors decrease with age and are produced in much lower percentages than dummy auxiliary errors. It can further be concluded that the percentages of dummy auxiliary use by the young SLI children (six-year-olds) in De Groot's study approximate those of other studies (Zwitserlood's and the present study). The percentage of dummy auxiliaries produced by the 9- to 12-year-old children in De Groot's study was lower than that of younger children, showing that dummy auxiliary use keeps decreasing as age increases.

The comparisons made above were based on narrative tasks. Some studies used more controlled tasks, such as completion tasks, to classify and quantify the errors made by SLI children. Orgassa's study is one such. In Table 6-8 the results of that study are compared with the results of one of the completion tasks of the present study.

Table 6-8 shows that the percentages of omission errors and dummy auxiliaries produced by the monolingual SLI children in Orgassa´s study were similar to those of children approximately one year younger in the present study (OMA = 16.9% and 14.2% respectively and dummy auxiliary = 22.0% and 21.1% respectively). On the other hand, the percentage of correct utterances produced by monolingual SLI children in Orgassa´s study was considerably higher (75.4%) than that produced by the younger children in the present study (49.5%). This shows that, although seven-year-olds make more errors than six-year-olds, they also produce more target utterances. In particular, the omission and substitution errors show that children are struggling to understand the rules behind inflection. The higher target scores show that they are succeeding. When comparing Orgassa's seven-year-olds with the eight-

year-olds in the present study, it can be seen that the latter produced percentages of correct utterances similar to those in Orgassa´s study (77.2 %).

Table 6-8. Percentages of most common verb related errors and target constructions in Dutch studies of monolingual and bilingual SLI children (completion task).

	Orgassa (2009)		Julien et al. (chapter 5): Morphology task present tense					
	L1 SLI (Mean age 7;3 years)	L2 SLI (Mean age 7;5 years)	L1 SLI (Mean age 4;9 years)	L2 SLI (Mean age 5;2 years)	L1 SLI (Mean age 6;6 years)	L2 SLI (Mean age 6;7 years)	L1 SLI (Mean age 8;0 years)	L2 SLI (Mean age 8;9 years)
Root infinitive	5.7	15.3	17.8	21	5.9	6.7	2.6	1.6
OAM (stem)	16.9	15.7	4.8	2.9	14.2	7.8	8.8	5.0
Substitution	9.3	19.0	0.2	1.3	0.5	0.2	1.5	0
Dummy auxiliary	22.0	21.2	40.9	28.5	21.1	24.2	5.5	2.3
Correct	75.4	63.9	19.4	26.5	49.5	50.6	77.2	75.6

A comparison of the bilingual groups in the two studies shows a steady decrease of dummy auxiliaries and a steady increase in correct utterances as children grow older. There is, however, a surprising observation: the seven-year-olds in Orgassa's study showed higher percentages of root infinitives, omission and substitution errors than the six-year-olds in the present study. This may be a sign that the older children, just like the seven-year-old monolingual children, are trying to understand the system of rules governing finiteness in Dutch. In their endeavor, they make more developmental errors. An examination of the percentages produced by the bilingual eight-year-olds in the present study shows that during the following year, errors decreased and correct utterances increased considerably. After six years of exposure, they reached the same percentage of correct scores as monolingual seven-year-olds. It is not clear whether their attainment of these scores one year ahead of the monolingual children - i.e., acquiring this aspect of the Dutch grammar in a shorter timespan than the monolingual children - is due to their being bilingual (bilingual advantage) or older (cognitive maturity).

To summarize, a comparison of studies clearly helps us reach a more complete picture than looking at the individual studies separately. We can now come to two important conclusions:

- The most frequent error made by both monolingual and bilingual SLI children, in controlled and less controlled tasks, is the use of the dummy auxiliary *gaan*;

- Monolingual and bilingual SLI children show the same pattern of acquisition. As exposure increases, root infinitives and dummy auxiliaries decrease (in the bilingual group this decrease is slow between four and six years of exposure and after that, the decrease is more marked); omission errors increase between four and six years of exposure and decrease from seven onwards. Correct utterances increase steadily.

We now return to the conclusion reached in 6.2, that TD, rather than SLI children, overuse dummy auxiliaries. At first sight, this conclusion clashes with that reached by other researchers such as De Jong, 1999; De Jong, Blom and Orgassa, 2013; Orgassa, 2009 and Zwitserlood, 2015. They claim that SLI children produce higher percentages of dummy auxiliaries than the TD children and interpret this overuse of dummy auxiliaries by the SLI children as a sign of delay or immaturity in grammatical development.

All studies, including the present one, do indeed show higher percentages of dummy auxiliaries in monolingual SLI children than monolingual TD children. The studies of bilingual children do not provide an equally clear picture. De Jong et al., (2013) only found that the children in their bilingual TD group showed a tendency to use fewer dummy auxiliaries than children in the bilingual SLI group. Given that the data used in this study is the same as that in Orgassa's study (2009), we conclude that, in the latter study, no clear differences were seen between the SLI children and the TD children in their use of dummy auxiliaries either.

A plausible explanation for the apparently different behaviour of the bilingual group is that the present study provides us with a broader picture than the studies mentioned above. Because we included young bilingual children and adult DAL learners in the beginning stages of their acquisition of Dutch, we were able to capture a stage of language acquisition that has not been captured by the other studies. The present study shows that bilingual SLI children – and it can be speculated that the same is true of monolingual children – are not as quick as TD

children in using dummy auxiliaries, particularly when the constructions become more complex. The effects of this slow start fade out and, after a few years of exposure, SLI children are also able to use this strategy. This explanation is supported by the findings in the present study: with two years of exposure, the SLI children produce fewer dummy auxiliaries than TD children in almost all tasks, but after four years of exposure, almost no difference was found between the SLI children and the TD children, except for the Narrative task. This corroborates De Jong et al.'s results (2013). They found no significant differences in dummy use between TDs and SLIs in the bilingual group.

One hypothesis that must be entertained in the light of the fact that the speed of decrease of dummy auxiliaries and increase in correct scores is much slower in bilingual TD children between two and four years of exposure than in SLI children with the same LoE is that this may be a result of overdiagnosis. As suggested before, some of the children who took part in the present study may not have had SLI. Nevertheless, they benefited from language therapy and, as a consequence, learned the rules more quickly than the TD children, who did not benefit from the same intensive language stimulation.

A possible conclusion we may draw from this discussion is that (the lack of) use of dummy auxiliaries may be a marker of SLI that is more clearly seen in the very beginning of language acquisition. After a few years of exposure its discriminatory power diminishes. This conclusion leads us to the discussion about the nature of SLI in the next section.

SLI: Delay or deviance?

The results clearly show that SLI children and adult DAL learners follow the same trajectory of acquisition as TD children (see Table 6.6). In the present study, it was found that not only inversion, but also past tense inflection and inflection of irregular and particle verbs, are more difficult for SLI children and that there is a tendency for SLI children to perform less well than TD children. However, as shown above, this did not always result in greater dummy auxiliary use by the SLI children.

What at first sight seems to be a deviant development, such as the acquisition of past tense inflection in the bilingual SLI group, turned out to reflect the same developmental pattern as the TD children. The differences can be explained on the basis of length of exposure to Dutch and slower pace (see 5.5.). This points to a deficit in *processing capacity* by the SLI children rather than a deficit in the *representation of linguistic knowledge* (see 1.2).

6.4. The developmental path

As already stated in 6.3, this study revealed that the trajectory of development is the same for adult DAL learners, TD L1 and L2 and SLI L1 and L2. All groups started by using free morphology to mark a syntactic relationship, and to realize person and number features separately from the thematic verb before acquiring inflection and movement of the thematic verb. The dummy auxiliaries *zijn* and *gaan* and the modals played a significant role in that process. This study has shown that the Dutch dummy auxiliaries *zijn* and *gaan* are devoid of perfect and prospective meaning, and that all groups involved used both dummy auxiliaries as a structural step towards the acquisition of finiteness. We propose that it is the copula *zijn* that sets off the process of acquisition of finiteness. This copula appears with a high frequency in the environmental input as a connecting element between subject and predicate. It plays a paramount role in raising the learners' awareness of a sentence-initial verbal slot. *Zijn*+INF, being the only auxiliary verb construction almost absent from the input (see 1.7.2), provides direct evidence that the periphrastic Aux+INF construction is an unconscious strategy to avoid verb movement and not an imitation of a widespread pattern in the environmental input. The fact that other candidates for dummy use, such as the verbs *doen* and *hebben,* were seldom used by these participants as dummy auxiliaries can be seen as evidence supporting this claim.

The following figure illustrates the decline of dummy auxiliaries in three of the groups participating in this study. It is not possible to plot the results of the other two groups, the monolingual TD children and the adult DAL learners, because we only have one value for the monolingual children, and because it is not possible to group the adults in terms of LoE (see footnote 63).

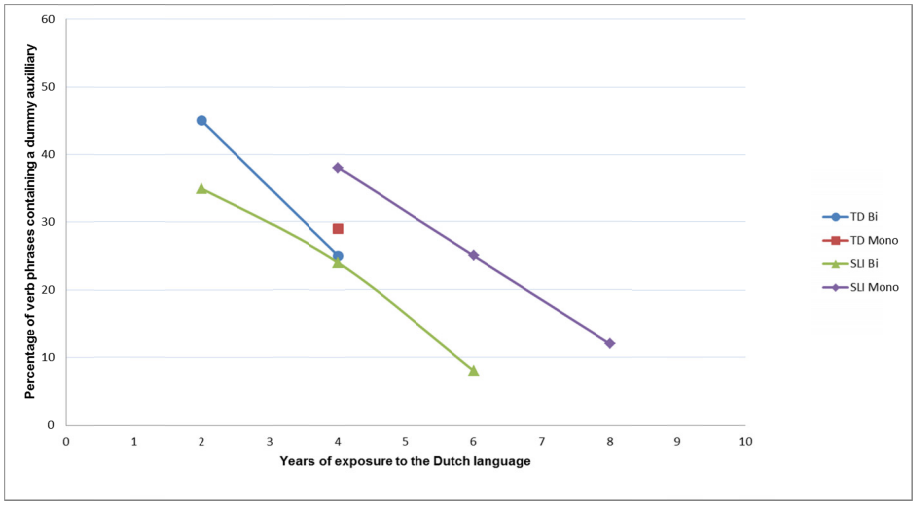

Figure 6-1. Percentage of children's verb phrases containing a dummy auxiliary in relation to years of exposure to Dutch.

Figure 6-1 shows that dummy auxiliary use[66] declines in the bilingual TD children and the SLI children (both monolingual and bilingual). After four years of exposure, TDs (monolingual and bilingual) and SLIs (bilingual) produce approximately the same percentages of dummy auxiliaries (between 25 and 29%). What Figure 6-1 clearly indicates is that SLI children, like TD children, use dummy auxiliaries, and that strategy is not related to being or not impaired, monolingual or bilingual. Rather, this strategy is related to what - or what children think - the target language allows.

Figure 6-2 illustrates the trend of dummy auxiliary use in Dutch child language acquisition.

[66] The percentages are the average of the sum of the dummy auxiliaries used in the imperfective condition of the Narrative task, the present tense condition of the Morphology task and both conditions of the Syntax task. The percentage of dummy auxiliaries in the past tense condition was excluded from these percentages in order to get a clear picture of dummy auxiliary use in conditions similar to each other.

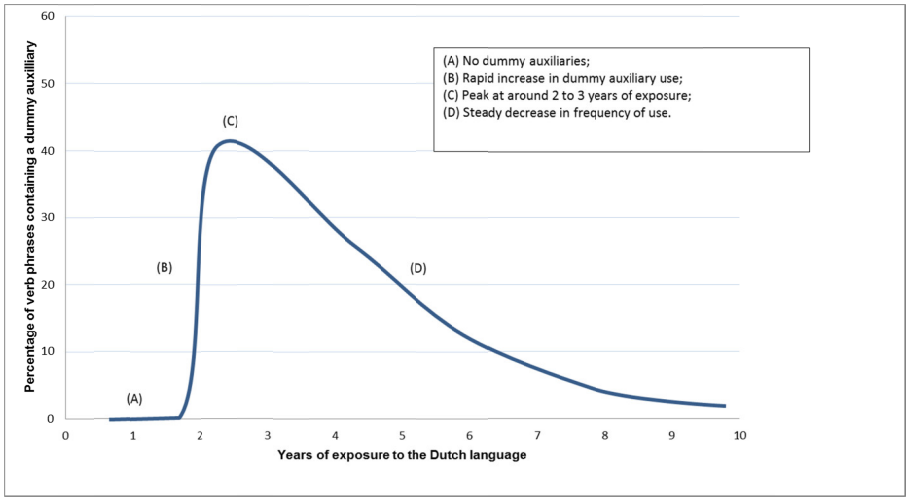

Figure 6-2. Sketch in time (years of exposure) of the developmental trend of dummy use in Dutch language acquisition

Figure 6-2 shows that there is an initial phase in which no dummy auxiliaries are used; usually up to 2 years. This period is followed by the appearance and rapid increase of dummy auxiliaries, peaking at an exposure time of between 2 and 3 years with frequencies around 40%. The period that follows is characterized by a steady decrease in the frequency never reaching 0%.

In fact, this figure reflects the trend evidenced in all groups that participated in this study: that is, a relatively long dummy phase leading to the final stage in which dummy auxiliaries decrease but do not fully disappear. This is particularly true for the adult DAL learners, who, due to a lack of opportunities to practice the language, often stagnate in the dummy phase.

To summarize, we can conclude that dummy auxiliaries indeed play a role in the acquisition of finiteness in Dutch. That role can be characterized, in all types of language acquisition involved in this study, as that of predecessors of movement of the lexical verb. The dummy auxiliaries *zijn* and *gaan* carry finiteness features such as person and number, and occur in the same slot that the finite verb will eventually occupy. Hence, they trigger the marking of the syntactic relationship between V and I and they have a purely structural function, in line with Chomsky's (1995) Economy Principle. Chomsky's Minimalistic Program (1995), in which a clear

distinction is made between syntax and morphology, seems to provide the best explanation for the fact that the first appearance of dummy auxiliaries in second position is not to express tense or agreement. At that stage they act as precursors of syntactic organisation. Later on, the dummy *gaan* is used as a carrier of person and number and later also of tense. The finding that, despite ascribing a neutral meaning to both *zijn*+INF and *gaan*+INF, the participants use these two dummy constructions extensively, supports our claim that, in the case of these two (dummy) auxiliaries, form precedes meaning.

6.5. Implications for the diagnosis of SLI

A number of findings reported in this dissertation are relevant for the process of diagnosing SLI in monolingual and bilingual children. Regarding the possible use of dummy auxiliaries as an indicator of SLI, we have seen that *gaan* is used too widely and extensively by both TD and SLI children and that the differences were often not significant. This makes dummy *gaan* an unsuitable candidate as a marker of SLI. The confounding of dummy *doen* with dialects, also makes it an unsuitable candidate. The dummy *zijn*, on the other hand, could possibly have that function. We have seen that very young children use this dummy auxiliary and that in typical development it fades out relatively quickly. However, the results of this study do not provide enough data to allow firm conclusions regarding the possible applicability of this dummy auxiliary as a diagnostic marker of SLI. Hence, more study is needed.

The comparisons made in the present study, based on length of exposure rather than on chronological age or school grade, indicate that LoE probably is a better measuring tool than age or grade to make comparisons between monolinguals and bilinguals. Moreover, the language performance of bilingual children suspected of having SLI should be compared with that of TD bilingual children raised in the same circumstances and, in particular, those with equivalent exposure (if possible, in terms of the amount, frequency and quality) to the languages in question.

Research on the acquisition of finiteness in Dutch has so far been carried out in a limited number of language combinations, namely Dutch -Turkish, Dutch -Tarifiyt, Dutch -Moroccan Arabic and Dutch - Sranantongo. The results suggest that L1 has a minimal influence in this aspect of Dutch grammar. This suggests that the same lack of L1 influence can be expected in other language combinations, at least within the same language families. It is possible that languages that are more distant to Dutch,

such as Mandarin, would show an effect on the acquisition of Dutch grammar. Recent research has shown that L2 children transfer verb inflection knowledge from their L1 (Blom and Baayen, 2012; Blom, De Jong, Orgassa, Baker and Weerman, 2013).

Nevertheless, the results of the present study and Orgassa's study (2009), show that monolingual and bilingual children with different language combinations follow the same development course, use the same strategies and make the same type of errors. This knowledge allows the diagnostician to make educated judgments and reach differential diagnoses more easily, provided that LoE to Dutch is taken into consideration. If clinicians compare children in terms of LoE, they will be able to set appropriate expectations regarding the command of Dutch of the child they are diagnosing, prevent unnecessary and expensive assessments, and more importantly, prevent misdiagnosis.

Finally, the results of the present study show that, when testing a certain grammatical feature, different language tasks may lead to different outcomes. When examining a child, it is thus advisable to combine tasks of different complexity (for instance, spontaneous language, story (re)telling and completion tasks), which put different demands on cognitive load and processing capacity. This will provide a better image of a child's command of a specific grammatical structure.

6.6. Implications for language teaching, language therapy and language policy on bilingualism

The finding that the most frequent errors children and adults make in the acquisition of Dutch inflection is the use of dummy auxiliaries, particularly the dummy *gaan*, added to the finding that the meaning of this dummy auxiliary takes a long time to acquire, suggests that the meaning of *gaan*+INF should be taught very early in language teaching as well as in therapy. This can be done by using visualisation and methods such as the Total Physical Response (TPR), whereby the action expressed by the verb is performed, showing the contrast between prospective and imperfective aspect. This might contribute to an understanding of the construction *gaan*+INF and to a quicker decrease in the production of that dummy and increase in utterances with a finite lexical verb.

At the same time, language teachers and language therapists should be made aware that opting for the more economical of equivalent alternatives is a general and smart strategy of language learners in general, regardless of whether they are

children or adults, monolingual or bilingual. It is probably more effective to tolerate the use of such strategies and, if possible, make use of them to clarify the use of some constructions. For example, the older children in our study used *willen* ('want')+INF to express prospective aspect (*willen*+INF expresses intention in standard Dutch) instead of *gaan*+INF. Teachers and language therapists could take advantage of learners' understanding of *willen*+INF to explain the meaning of *gaan*+INF and the use of finite verbs. This can be done, for instance, by using short films and creating exercises with sentences such as the following *'Hij **wil eten**, dus hij **gaat** het eten klaar maken. Hij **eet nu**.'* ('He wants to eat. So, he is going to prepare the food. He is eating now').

Understanding of the prospective meaning of the dummy *gaan* may work positively against fossilization in the dummy stage. Some researchers (cf. Van de Craats, 2009, Starren, 2001) claim that adults'learning of the Dutch language often fossilizes at this stage.

Overall language policy often harbours the notion that bilingual children perform poorly in school because of their bilingualism. It is also commonly assumed, not only by policy makers but also by educators and other professionals, that acquiring two languages is too challenging for SLI children. The results of the present study show a tendency for bilingual children with three to four years of exposure to Dutch to catch up or even reach higher percentages of correct scores than monolingual children. In the study of TD children (chapter 4), the Y-bilinguals achieved higher percentages of target responses than the VY-monolinguals in both conditions of the Morphology and Syntax tasks, although the differences were not significant. It should be remembered that Y-bilinguals and the VY-monolinguals had the same length of exposure to Dutch. In the study of SLI children, the same can be observed in all conditions of the Narrative task, and both conditions of the Morphology and Syntax tasks (chapter 5). It is conceivable that maturity or positive effects of bilingualism, such as better metalinguistic skills, are the explanatory factors for the higher target responses of the bilingual children. A study of Blom and Polišenska (2006) revealed that bilingual child learners outperformed monolingual children in the correct use of 3rd person number agreement. They suggest that this finding may be explained by the interaction of cognitive and grammatical development, and that the relatively older age of the bilingual children may be an advantage.

This makes us question the widespread notion that TD bilingual children and SLI children share surface phenomena and both groups are slow in their language

acquisition (Armon-Lotem, De Jong and Meir, 2015; De Jong et al. 2013; Orgassa, 2009). The results of the present study show that TD bilingual children make the same errors in equivalent percentages as TD monolingual children with the same amount of exposure to the target language. The notion that successive bilingual TD children use dummy auxiliaries more extensively than monolingual children (Blom and De Korte, 2011; Lalleman, 1986) stems from comparing bilingual children with monolingual children with the same chronological age but different experiences with the target languages. Not surprisingly, the picture obtained from such a comparison resembles that of SLI children and leads to the erroneous conclusion that bilingual development resembles SLI development rather than TD monolingual development.

The fact that, in this study, bilingual children and those with SLI caught up with monolingual children more quickly than has been reported in previous studies, may be explained by the fact that most children in the present study had received exposure to Dutch from age 2;6 years and often within the VVE programs[67]. It is well known that limited language input and fewer communication opportunities tend to slow down the rate of L2 acquisition (Genesee, Paradis, and Crago, 2004). This should be a reason to maintain these programs. They should integrate material and activities to stimulate the other (often the first) language of these children so that that language is not lost. Losing the first language may lead to loss of (quality) communication with parents, who often do not have a good command of Dutch. Hence, focusing only on the learning of Dutch and neglecting the first language of the children may lead to negative consequences for their emotional and social development. In addition, stimulating the mother tongue of the children, parallel to the stimulation of the Dutch language, will lead to a more balanced bilingualism and a more positive attitude of the children, their parents and society towards bilingualism.

6.7. Suggestions for further research

The size of the individual variation and the limited number of participants in this study call for some caution in interpreting the findings. Replicating this study in a larger sample would allow us to reach more reliable and robust conclusions.

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[67] VVE stands for *Voor- en Vroegschoolse Educatie* (Pre- and Early School Education). These are programs aimed at stimulating the acquisition of Dutch by children with a low command of that language. In general, lessons take place at a frequency of two to three times a week, for approximately three hours each time, starting at approximately age 2;6 years.

The results of this study show that the dummy *zijn* is primarily used in the early stage of Dutch language acquisition. In chapter 5 it was suggested that extensive use of this dummy auxiliary might be a sign of difficulties in acquiring Dutch, because this dummy auxiliary is short-lived in typical child development. More research on a large scale is needed to explore the possible role of this dummy in the diagnostic process of SLI in both monolingual and bilingual children. Such a study should elicit not only the 3rd person singular, but also other grammatical persons.

In addition, individual differences need to be investigated in more detail in order to detect patterns that could be indicative of more difficulty experienced by SLI than TD children in learning language: for example, the use of two dummies in the same utterance, such as *zijn*+*gaan*+INF or use of the same pattern of *gaan* (e.g. *ga* (stem)+INF) invariably in different contexts, e.g., plural or present and past. These types of error may be a reflection of a certain inflexibility or slowness in processing the rules of language characteristic of SLI children or of slow learners.

One other conclusion of this study was that not only LoE, but also amount, frequency and quality of exposure may have contributed to the observed differences among the groups. Measures of exposure in future studies should therefore try to include these factors, for instance, by taking into account the hours of continuous and regular exposure to the target language, and the language proficiency of the regular speech partners, not only in Dutch, but also in other languages involved.

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Index of tables and figures

Tables

Figures, graphs and images

Appendix 1. Verbs used in this study

(split out for class (vertical) and type (horizontal))

	Stative	Transitive	Intransitive	Resultative
1. Regular	*Kennen* (‘know’)	*Schoppen* (‘kick’)	*Zwaaien* (‘wave’)	*Botsen* (‘collide’)
	Voelen (‘feel’)	*Bouwen* (‘build’)	*Huilen* (‘cry’)	*Rennen* (‘run’)
	Horen (‘hear’)	*Kussen* (‘kiss’)	*Tekenen* (‘draw’)	*Schaatsen* (‘skate’)
	Lusten (‘enjoy’ food)	*Maken* (‘make’)	*Dansen* (‘dance’)	*Stoppen* (‘stop’)
	Smaken (‘taste’)	*Gooien* (‘throw’)	*Vissen* (‘fish’)	
	Wonen (‘live’)	*Aaien* (‘caress’)	*Praten* (‘talk’)	
		Pakken/halen (‘get’)	*Poepen* (‘ poop’)	
			Schommelen (‘swing’)	
			Spelen (‘play’)	
			Plassen (‘pee’)	
2. Irregular	*Zitten* (‘sit’)	*Vangen* (‘catch’)	*Slapen* (‘sleep’)	*Glijden* (‘slide’)
	Liggen (‘lay down’)	*Geven* (‘give’)	*Vliegen* (‘fly’)	*Klimmen* (‘climb’)
	Zien (‘see’)	*Drinken* (‘drink’)	*Springen* (‘jump’)	*Vallen* (‘fall’)
	'Dag' *zeggen* (‘say ‘bye’’)	*Eten* (‘eat’)	*Denken* (‘think’)	*Duiken* (‘dive’)
	Staan (‘stand’)			*Komen* (‘come’)
	Hebben (‘have’)			*Kruipen* (‘crawl’)
	‘Lekker’ vinden (‘find ‘something tasty’’)			(omhoog) *springen* (‘jump’ upwards)
	Krijgen (‘get’)			

	Houden van (‘love’)			
3. Particle	*Loslaten* (‘release’)	*Uitblazen* (‘blow out’)	*Omkijken* (‘look around’)	*Binnenkomen* (‘come in’)
	Neerzetten (‘put down’)	*Opruimen* (‘clean up’)	*Aanbellen* (‘ring’ the bell)	*Uitstappen* (‘step out/ get off’)
	Vastzitten (‘be stuck’)	*Dicht maken/doen* (‘close’)	*Uitslapen* (‘sleep late’)	*Wegrijden* (‘ride away’)
	Meenemen (‘take along’)	(Licht) *aandoen.* (‘turn on’ (light))	*Voorlezen* (‘read aloud’)	(de trap) *Oplopen* (‘walk up’ (the stairs))
	Omkijken (‘look around’)	*Aanbellen* (‘ring’)		*Opstaan* (‘stand up’)
		Voorlezen (‘read aloud’)		
		Schoonmaken (‘clean’)		
		Vastpakken (‘grasp’)		

This categorization of verb classes, is partly based on Vendler’s (1957) four-way distinction explained in section 1.7.2, and partly adapted to suit Dutch peculiarities such as the fact that action verbs indicating a direction and endpoint form the present perfect with the auxiliary *zijn* (‘be’), whereas other verbs combine with the auxiliary *hebben* (‘have’). Most verbs fall completely within one of these categories, but some are ambiguous cases that can fall within two different categories. An example is the verb *voorlezen* (‘read aloud’) which can be used as a transitive as well as an intransitive verb. That is why it appears in both columns.

Appendix 2. Anamnesis questionnaire (in Dutch)

ANAMNESE behorend bij het project 'vergankelijke structuren: de functie van lege hulpwerkwoorden in taalverwerving'.

Naam kind:	j / m
Geboortedatum kind:	
Hoogste opleiding vader:	
Hoogste opleiding moeder:	
Deze anamnese is ingevuld door:	
School en groep:	
Datum van deze anamnese:	

1. Algemene vragen over de ontwikkeling en gezondheid

Is er sprake van een trage ontwikkeling in de moedertaal?[68]	ja	nee
Omcirkel het goede antwoord.		
Is er sprake van terugkerende gehoorproblemen?[69]	ja	nee
Is er sprake van een cognitieve achterstand?	ja	nee
Is er sprake van gedragsproblemen?	ja	nee

2. Algemene vragen over het taalaanbod

[68] Meertalige kinderen met een trage ontwikkeling in het Nederlands zonder dat er sprake is van een trage taalontwikkeling in de moedertaal zijn niet geschikt voor de groep kinderen met SLI van dit onderzoek. Ze zijn wel geschikt voor de groep zich normaal ontwikkelende NT2.

[69] Als er sprake is van terugkerende gehoorproblemen, een cognitieve achterstand en/of gedragsproblemen is het kind niet geschikt voor dit onderzoek.

Is het kind Nederlandstalig?	ja nee
Is het Nederlands de moedertaal van moeder?[70]	ja nee
Is het Nederlands de moedertaal van vader?	ja nee
Is het kind meertalig?	ja nee
Zo ja, welke talen spreekt het kind?	..……
Verliep het leren van de talen na elkaar?	ja nee
Als het leren van de talen na elkaar verliep; welke taal leerde het kind als eerste / tweede / derde?	1ste: …...……
	2de: …...……
	3de: ……
Op welke leeftijd kreeg het kind regelmatig Nederlands taalaanbod?[71]	0 jaar / 1 jaar / 2 jaar / 3 jaar / 4 jaar

3. De taalsituatie in het gezin

Uit welk land komt de vader van het kind?	……
Wat is de moedertaal van de vader?[72]	……
Uit welk land komt de moeder van het kind?	……
Wat is de moedertaal van de moeder?	……
Welke taal spreken de ouders thuis onderling?	……
Welke taal spreekt de vader meestal met het kind?	……
In welke taal geeft het kind antwoord aan vader?	……
Welke taal spreekt de moeder meestal met het kind?	……
In welke taal geeft het kind antwoord aan moeder?	……
Welke taal spreken de kinderen in het gezin meestal onderling?	……
Wie is de belangrijkste verzorger van het kind?	…… ……

[70] Eentalige kinderen waarbij vader en/of moeder een andere moedertaal heeft dan het Nederlands zijn niet geschikt voor dit onderzoek.
[71] Meertalige kinderen die regelmatig Nederlands taalaanbod kregen vóór het 2½ jaar zijn niet geschikt voor dit onderzoek.
[72] a) Kinderen van Koerdisch sprekende ouders zijn niet geschikt voor dit onderzoek; b) Bij Marokkaanse kinderen is het belangrijk om te weten of de moedertaal van de ouder(s) Berbers of Arabisch is.

Welke taal spreekt de verzorger met het kind?	……
Heeft de belangrijkste verzorger deze taal altijd met het kind gesproken?	……
Zo niet, welke taal sprak hij of zij eerst met het kind (bijvoorbeeld vóór het schoolbegin)?	

4. Inschatting taalbegrip vóór het schoolbegin

Op welke manier kwam het kind vóór het schoolbegin in contact met het Nederlands? *U mag (alleen) bij deze vraag meerdere antwoorden omcirkelen.*	televisie / boeken / peuterspeelzaal / broers en/of zussen / buren
Verstond het kind Nederlands vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Verstond het kind Turks vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Verstond het kind Koerdisch vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Verstond het kind Berbers vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Verstond het kind Marokkaans-Arabisch vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Verstond het kind een andere taal vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Zo ja, welke taal verstond het kind vóór het schoolbegin?	……

5. Inschatting taalproductie vóór het schoolbegin

Sprak het kind Nederlands vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Sprak het kind Turks vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Sprak het kind Koerdisch vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Sprak het kind Berbers vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Sprak het kind Marokkaans-Arabisch vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Sprak het kind een andere taal vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
Zo ja, welke taal sprak het kind vóór het schoolbegin?	niets / enkele woorden / redelijk / goed
	……

Appendix 3. Coding system

(short version)

Code	One (lexical) verb	Example
1	Infinitive	Lopen ('to walk')
2	Stem	Loop ('walk')
3	Correct finite present tense	Hij loopt ('he walks')
4	Incongruence	Wij loopt ('we walks')
12	Past participle	Gelopen ('walked')
13	Correct finite past tense	Hij liep ('he walked')
	AUX *zijn* ('be')+ lexical verb	
20	*Zijn* + infinitive	* Hij is lopen ('He is walk.INF')
25	*Zijn* + past participle	Hij is naar huis gelopen ('He has walked to his house')
	AUX *gaan* ('go')+ lexical verb	
30	*Gaan* + infinitive	Hij gaat lopen ('He goes walk.inf')
	AUX *hebben* ('have') + lexicaal werkwoord	
40	*Hebben* + infinitive	*Hij heeft lopen ('he has walk.INF')
45	*Hebben* + past participle	Hij heeft gelopen ('He has walked')
	AUX *doen* ('do') + lexical verb	
50	*Doen* + infinitive	*Hij doet lopen ('He does walk.INF')
	Modal + lexical verb	
60	*Kan/moet/mag/wil/zal* + infinitive	Hij kan lopen ('He can walk.INF')
	***Zijn* [+ A] + PP**	
70	*Zijn* + aan het + infinitive	Hij is aan het lopen
77	*Zijn* + klaar/gestopt met + infinite	Hij is klaar/gestopt met lopen ('He is ready/stopted with walk.INF')
78	*Zijn* + bezig met + infinitive	Hij is bezig met lopen (He is busy with walk.INF')
80	*Zitten* ('sit')/*staan* ('stand')/*liggen* ('lay down')/*lopen* ('walk')/ + te ('to') + lexical verb	Hij staat te praten ('He stands to talk.INF')

86	*Beginnen* ('start')/*starten*('start')/ /*proberen* ('try') + te ('to') + infinitive	Hij begint te lopen ('He starts to walk.inf')
87	*Blijven* ('keep') + infinitive	Hij blijft lopen ('He keeps walk.INF')
88	*Stoppen* + met ('with')/ te ('to') + infinitive	Hij stopt met lopen ('He stops with walk.INF)
	Rest	
100	Chunk or imperative	
103	Not classifiable	
104	Repetion of speech partners utterance	
999	Missing value	

* means incorrect

Samenvatting

In dit proefschrift wordt verslag gedaan van een onderzoek naar de rol van *lege hulpwerkwoorden* (hulpwerkwoorden die niet lijken te worden gebruikt om tijd of aspect uit te drukken) bij het verwerven van finietheid in het Nederlands door verschillende groepen taalverwervers: monolinguale en bilinguale zich normaal ontwikkelende kinderen, monolinguale en bilinguale kinderen met een taalontwikkelingsstoornis (TOS) en volwassenen die het Nederlands als een tweede taal leren.

Lege hulpwerkwoorden, ook *dummy auxiliaries* genoemd, komen vaak voor in het taalgebruik van verschillende typen taalverwervers en in verschillende talen.

Er bestaan verscheidene verklaringen voor het ontstaan en voor de rol van lege hulpwerkwoorden. Sommige zijn gebaseerd op structurele theorieën over taalverwerving en andere op semantische. Ondanks een groot aantal studies over lege hulpwerkwoorden in de afgelopen jaren, is er nog geen consensus over de oorsprong en functie van lege hulpwerkwoorden in verschillende types van taalverwerving. De vraag is ook of kinderen met een TOS deze lege hulpwerkwoorden anders gebruiken dan zich normaal ontwikkelende kinderen en of kennis hierover gebruikt zou kunnen worden in de diagnose van TOS bij eentalige en tweetalige kinderen.

De huidige studie draagt bij aan het debat over het ontstaan en de rol van lege hulpwerkwoorden. De volgende vragen staan centraal: spelen lege hulpwerkwoorden een rol bij het verwerven van finietheid in het Nederlands? Wat is die rol? En zijn er verschillen in de manier waarop ze worden gebruikt door verschillende typen taalleerders?

Om deze vragen te beantwoorden werd eerst een corpusstudie met data over spontane taal van vijf Nederlandse eentalige kinderen van 1;6 tot 3;6 jaar uitgevoerd. Deze studie werd gevolgd door drie experimentele studies met vijf groepen proefpersonen: volwassenen die het Nederlands als tweede taal leren in de leeftijd van 21 tot 54 jaar, zich normaal ontwikkelende eentalige en tweetalige kinderen van 3;6 tot 7;9 jaar en eentalige en tweetalige TOS kinderen tussen 4;1 en 9;7 jaar. De volwassenen en de tweetalige kinderen, die deelnamen aan dit onderzoek, hadden als moedertaal één van de volgende talen: Turks, Tarifiyt of Marokkaans-Arabisch.

De corpusstudie, die wordt gepresenteerd in hoofdstuk 2, laat zien dat een paar maanden na het bereiken van de leeftijd van twee jaar, het gebruik van finiete

werkwoorden in de beginpositie -V1/V2 positie- van zinnen snel toeneemt. Die toename in de frequentie van finiete werkwoorden in initiële positie betekent echter niet dat lexicale werkwoorden naar voren worden verplaatst. Anders gezegd, die toename is geen teken van een syntactisch verplaatsingsproces.

De finiete werkwoorden in beginpositie zijn vooral modale werkwoorden, het koppelwerkwoord *zijn* en enkele statieve werkwoorden. De aanname is dat dit soort werkwoorden direct uit het lexicon gehaald wordt en een plaats krijgt in de V1/V2 positie. De infinitieven die al op grote schaal worden gebruikt in de voorgaande fase, blijven in de zinsfinale positie en worden gecombineerd met een (leeg) hulpwerkwoord. Ze vormen dus complexe predicaten van het type Aux+INF. De data brachten ook aan het licht dat alle vijf kinderen niet alleen gebruik maakten van de lege hulpwerkwoorden die het meeste worden besproken in de literatuur, namelijk *gaan* en *doen*, maar ook van het lege hulpwerkwoord *zijn*. De lege hulpwerkwoorden *zijn* en *doen* worden veel minder gebruikt dan het lege hulpwerkwoord *gaan*.

De conclusie van de corpus studie is dat in ieder geval tot en met 3;6 jaar (de hoogste leeftijd die kinderen hadden op het moment van de laatste geanalyseerde opname) de onderzochte kinderen nog steeds beide constructies - 'hij gaat/is/doet zien' en 'hij ziet' - beschouwen als gelijkwaardig in betekenis en in hun taalproductie kiezen voor de vorm die structureel gemakkelijker is. De redenering is dat lege hulpwerkwoorden worden gebruikt om een syntactische positie vast te leggen zonder dat het lexicale werkwoord verplaatst hoeft te worden. Verplaatsing van het lexicale werkwoord van de finale positie naar de beginpositie in de zin is tot de leeftijd van 3;6 jaar beperkt, zo niet helemaal uitgesloten.

De overige drie studies, die dit proefschrift beschrijft, waren experimenteel. Dezelfde set experimenten werd gebruikt: een begripstaak, een verteltaak en twee aanvultaken. Alle taken lokten bij de proefpersonen het gebruik van de derde persoon enkelvoud uit. Hierbij werden filmfragmenten uit animatiefilms met de figuur Pingu gebruikt, in combinatie met foto's uit elk van die fragmenten.

Zowel de begripstaak als de verteltaak is opgezet om te testen of aspectuele betekenis een rol speelt in het gebruik van *zijn*+INF en *gaan*+INF. Eén van de aanvultaken werd ontwikkeld naar aanleiding van de vraag of het aantal geproduceerde lege hulpwerkwoorden toeneemt bij een verhoging van het aantal syntactische stappen dat nodig is om een zin met inversie te produceren. De andere aanvultaak werd ontwikkeld om de relatie tussen morfologische vaardigheden

(flexie) en het gebruik van lege hulpwerkwoorden te onderzoeken. Deze bestond uit het aanvullen van zinnen in de tegenwoordige tijd en in de verleden tijd.

Hoofdstuk 3 beschrijft de studie van volwassenen die het Nederlands als tweede taal leren, met een T2-vaardigheid onder het Waystage niveau (A2) van het Gemeenschappelijk Europees Referentiekader (ERK). De volvassenen in deze studie gebruikten lege hulpwerkwoorden en interpreteerden deze als semantisch leeg. Vaardigheidsniveau in de doeltaal, meer dan taalachtergrond, leek niet alleen het gebruik van lege hulpwerkwoorden te bepalen, maar ook welk leeg hulpwerkwoord werd gebruikt.

Volwassen leerders in een vroeg stadium van taalverwerving gebruikten zowel het leeg hulpwerkwoord *zijn* als *gaan*, terwijl meer gevorderde leerders voornamelijk *gaan* bleven gebruiken en het gebruik van *zijn* aanzienlijk verminderden. Het lijkt erop, en dat is niet eerder vastgesteld, dat er twee fases in het dummy stadium bestaan: de ‘dummy *zijn* en *gaan*-fase’ en een daaropvolgende 'dummy *gaan*-fase'.

De resultaten van de studie van volwassenen die het Nederlands als tweede taal leren tonen aan dat verhoogde morfologische en syntactische complexiteit geen toename van het gebruik van lege hulpwerkwoorden veroorzaakt. In feite produceren de meeste volwassen proefpersonen geen zinnen met inversie. In plaats daarvan produceren ze voornamelijk V3-zinnen. Hoewel ze veelvuldig gebruik maakten van lege hulpwerkwoorden in de tegenwoordige tijd, gebruikten ze in situaties die de verleden tijd vereisten het voltooide deelwoord, vaak in combinatie met een bijwoordelijke bepaling van tijd.

Volwassen leerders van het Nederlands hebben vaak niet voldoende gelegenheid om het Nederlands te horen en productief te gebruiken. Een zekere mate van blootstelling is echter noodzakelijk om de drempel voor het gebruik van bepaalde constructies te bereiken. Bij de volwassenen in onze studie was de ‘blootstellingsdrempel’ om inversie en de vervoegingen voor de verleden tijd te leren gebruiken nog niet bereikt. Andere factoren, zoals transfer uit de talen die zij eerder hadden geleerd, persoonlijke motivatie en de kwaliteit van het onderwijs, kunnen ook hebben bijgedragen aan het geconstateerde foutenpatroon. Het feit dat sommige volwassen deelnemers op niveau A2 zinnen met inversie gebruikten en het werkwoord in de verleden tijd vervoegden, toont aan dat sommige volwassenen de drempel van de blootstelling aan de doeltaal die nodig is om deze meer complexe constructies te beheersen hadden bereikt.

Hoofdstuk 4 presenteert de resultaten van de studie over de productie en het begrip van lege hulpwerkwoorden bij zich normaal ontwikkelende eentalige kinderen (3;6 - 5;7 jarigen) en vroeg tweetalige (Turks-Nederlands, Tarifiyt-Nederlandse en Marokkaans Arabisch-Nederlands) kinderen (4;0 -7;9 jaar). De studie laat zien dat tweetalige kinderen die opgroeien in Nederland, hetzelfde ontwikkelingspatroon vertonen bij het verwerven van finietheid in het Nederlands als eentalige kinderen, inclusief het gebruik van lege hulpwerkwoorden om te verwijzen naar lopende gebeurtenissen. Vooral het lege hulpwerkwoord *gaan*, maar in de beginfase ook het lege hulpwoord *zijn* worden het meeste gebruikt.

De data laten zien dat de meeste kinderen, inclusief de oudere, geen prospectieve of perfectieve betekenis toewijzen aan die twee hulpwerkwoorden. De experimentele resultaten laten verder zien dat het gebruik van lege hulpwerkwoorden toeneemt wanneer morfologische (verleden tijd vervoeging) en syntactische (inversie) complexiteit van de taak wordt verhoogd. Verder had het type werkwoord duidelijk invloed op het gebruik van lege hulpwerkwoorden. Complexe scheidbare werkwoorden lokken meer lege hulpwerkwoorden uit dan regelmatige en onregelmatige werkwoorden. Het effect van werkwoordklasse op het gebruik van lege hulpwerkwoorden was niet overtuigend. Slechts in twee experimentele taken was er een tendens dat lege hulpwerkwoorden meer bij handelingswerkwoorden dan bij statieve werkwoorden optraden.

Er was geen effect van de eerste taal van de tweetalige kinderen, terwijl er wel een duidelijk effect van de duur van de blootstelling aan het Nederlands werd gevonden. Kinderen met minder jaren van blootstelling aan het Nederlands lieten aanzienlijk minder nauwkeurige reacties en meer lege hulpwerkwoorden zien dan degenen met meer blootstelling. Tweetalige en eentalige kinderen met dezelfde mate van blootstelling aan het Nederlands verschilden niet significant van elkaar in het behalen van correcte scores, noch bij het gebruik van lege hulpwerkwoorden. In feite bereikten de zeer jonge tweetalige kinderen die 1;6 tot 3;3 jaar blootstelling aan het Nederlands hadden gehad in deze periode hetzelfde nauwkeurigheidsniveau en lieten vergelijkbaar gebruik van hulpwerkwoorden zien als de zeer jonge eentalige kinderen die een langere blootstelling aan het Nederlands hadden gehad. Dit was vooral het geval in de taken met eenvoudige declaratieve zinnen in de tegenwoordige tijd. De conclusie is dat niet het onderscheid tussen eerste- en tweedetaalverwerving, maar de duur van de blootstelling aan het Nederlands de relevante verklarende factor lijkt te zijn voor bereiken van het stadium van

verwerving van verbale inflectie en van het gebruik en de keuze van lege hulpwerkwoorden bij zich normaal ontwikkelende eentalige en tweetalige kinderen.

Hoofdstuk 5 rapporteert de resultaten van de experimentele data over het begrijpen en produceren van lege hulpwerkwoorden door TOS-kinderen die het Nederlands als eerste of tweede taal verwerven. Ook TOS-kinderen van 4;1 tot 9;7 jaar gebruiken lege hulpwerkwoorden, in het bijzonder *zijn* en *gaan*, voorafgaand aan het productief gebruik van finiete lexicale werkwoorden in V1/V2 positie. De taalachtergrond van de tweetalige kinderen speelt hierin een ondergeschikte rol. Productie-experimenten onthulden dat de blootstellingsduur aan de doeltaal de frequentie beïnvloedt en de keuze van geproduceerde lege hulpwerkwoorden bepaalt. Het lege hulpwerkwoord *zijn* verdwijnt binnen de eerste drie jaar van blootstelling aan het Nederlands. De frequentie van het gebruik van het lege hulpwerkwoord *gaan* daalt tot percentages van ongeveer 3% binnen zes tot acht jaar van blootstelling, terwijl het aantal finiete werkwoorden in V2-positie toeneemt tot percentages rond 77%. Het taalbegripsexperiment liet zien dat een blootstelling van zeven tot acht jaar aan het Nederlands noodzakelijk is om de precieze betekenis (d.w.z. nabije toekomst of voornemen) van de constructie *gaan*+INF te begrijpen. Voor die tijd geeft de meerderheid van de proefpersonen een niet-specifieke (default) betekenis aan deze constructie. Deze twee bevindingen suggereren een verband tussen het begrijpen en het produceren van het lege hulpwerkwoord *gaan*. Het lijkt erop dat in het begin van de taalontwikkeling kinderen (lege) hulpwerkwoorden gebruiken om het hoofd te bieden aan de morfosyntactische moeilijkheden van het verwerven van vervoeging en verplaatsing van het lexicale werkwoord, maar deze vervolgens blijven gebruiken zolang ze de betekenis van *gaan*+INF niet begrijpen.

De experimentele resultaten van de productietaken toonden ook aan dat, net als bij de studie over de zich normaal ontwikkelende kinderen, het gebruik van lege hulpwerkwoorden toeneemt naarmate de morfologische (verleden tijd) en morfosyntactische complexiteit (inversie en het type werkwoord) toeneemt. Er was geen duidelijk effect van lexicaal aspect, hoewel er wel een tendens bestond dat lege hulpwerkwoorden minder voorkwamen bij bepaalde statieve werkwoorden.

In hoofdstuk 6 worden de resultaten van de vier studies vergeleken en gerelateerd aan huidige theorieën over taalverwerving en taalstoornissen. Daarnaast worden implicaties voor diagnose en therapie van TOS, taalonderwijs en taalbeleid op tweetaligheid besproken en suggesties gedaan voor verder onderzoek.

De resultaten dragen bij aan het theoretische debat over de rol van lege hulpwerkwoorden in de verwerving van het Nederlands. De conclusie is dat lege hulpwerkwoorden inderdaad een rol spelen bij het verwerven van finietheid in het Nederlands. In alle soorten taalverwerving die onderzocht zijn in dit onderzoek kan deze rol worden gekarakteriseerd als die van voorloper van verplaatsing van het lexicale werkwoord van de zinsfinale positie naar de V1/V2-positie.

Een andere belangrijke conclusie van deze studie is dat er sprake lijkt te zijn van een 'lege hulpwerkwoord-stadium' met twee fases: een eerste fase waarin zowel het lege hulpwerkwoord *zijn* als het lege hulpwerkwoord *gaan* wordt gebruikt, en een daaropvolgende fase waarin het gebruik van *zijn* vermindert terwijl het gebruik van *gaan* wordt voortgezet.

Omdat de groepen met de minste blootstelling aan het Nederlands een zeer vergelijkbaar foutenpatroon laten zien, ondanks verschillende leeftijden bij de aanvang van het leren van het Nederlands (en verschillende eerste talen), kan worden geconcludeerd dat deze bevindingen goed passen binnen wat ik de 'blootstellingsdrempel-hypothese' heb genoemd. Deze hypothese is dat er een minimum (=drempel) van blootstelling bestaat, die nodig is om de taal te verwerven, voor elke structuur die geleerd moet worden. Sommige structuren vereisen meer blootstelling dan anderen. Voor het Nederlands lijken de drempels voor het leren vervoegen van de verleden tijd en voor de realisatie van inversie hoger dan die voor het verwerven van de tegenwoordige tijd en voor de vervoeging daarvan in declaratieve zinnen. De uitingen van kinderen met weinig blootstelling aan het Nederlands vertoonden dezelfde syntactische structuur als die van de volwassenen die het Nederlands als tweede taal leren. Deze bevinding en de bevinding dat bepaalde volwassen proefpersonen op niveau A2 zinnen met inversie en vervoegde werkwoorden in de verleden tijd produceerden, lijken erop te wijzen dat kinderen en volwassenen over dezelfde linguïstische representatie beschikken en dat blootstelling aan de doeltaal en niet de (on)mogelijkheid van toegang tot de Universele Grammatica bepalend is voor de verwerving van finietheid.

Een andere conclusie in dit onderzoek is dat slechts onder bepaalde omstandigheden TOS-kinderen lege hulpwerkwoorden vaker gebruiken dan zich normaal ontwikkelende kinderen. Hogere percentages van het gebruik van lege hulpwerkwoorden bij TOS-kinderen dan bij zich normaal ontwikkelende kinderen werden bovendien alleen gevonden in de eentalige groepen. De zeer jonge tweetalige TOS-kinderen produceerden minder lege hulpwerkwoorden dan de tweetalige zich normaal ontwikkelende kinderen van dezelfde leeftijd in alle

experimentele condities. De wat oudere tweetalige TOS-kinderen produceerden vergelijkbare percentages van lege hulpwerkwoorden als de tweetalige zich normaal ontwikkelende kinderen van dezelfde leeftijd. Deze bevindingen steunen de hypothese dat het gebruik van lege hulpwerkwoorden een strategie is die, in het vroege stadium van de taalontwikkeling, efficiënter wordt gebruikt door zich normaal ontwikkelende kinderen dan door TOS-kinderen. In vergelijking tot zich normaal ontwikkelende kinderen vertonen TOS-kinderen niet alleen een achterstand in het leren (afleiden) van de onderliggende regels voor het produceren van correcte uitingen, maar ook in het opstarten van het gebruik van lege hulpwerkwoorden.

De resultaten wijzen op een tekort aan verwerkingscapaciteit door de TOS-kinderen (in vergelijking met zich normaal ontwikkelende kinderen is hun ontwikkeling vertraagd maar vergelijkbaar) en niet op een tekort in de mentale representatie van de linguïstische kennis dat zou kunnen leiden tot verschillende soorten fouten.

Een voorlopige conclusie die kan worden getrokken uit deze bevindingen is dat het (ontbreken van het) gebruik van lege hulpwerkwoorden een aanwijzing (markeerder) voor TOS zou kunnen zijn die duidelijker kan worden waargenomen aan het begin van de taalverwerving. Langdurig gebruik van, in het bijzonder, het hulpwerkwoord *zijn* kan een teken zijn van moeilijkheden bij het verwerven van het Nederlands, omdat dit hulpwerkwoord slechts kort wordt gebruikt in een typische taalontwikkeling.

De resultaten geven aan dat duur van de blootstelling aan een taal een beter instrument is dan leeftijd om (eentalige en tweetalige) kinderen met verschillende ervaringen met die taal te vergelijken. Een nog beter instrument zou niet alleen de duur van de blootstelling moeten meten maar zou ook rekening moeten houden met de kwaliteit van de blootstelling. Belangrijke indicatoren zijn de mate van ononderbroken en regelmatige blootstelling en de taalvaardigheid van de reguliere gesprekspartners. Toekomstige studies zouden rekening moeten houden met deze indicatoren.

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"Je hebt anderen nodig om verder te komen " Deze uitspraak is de ondertitel van een multimedia theaterstuk genaamd 'Trekhaak gezocht!' van schrijver Tjerk Ridder. Ik zag dit stuk in 2016 bij gelegenheid van een algemene bijeenkomst van de personeelsleden van Pento, de organisatie waarvoor ik sinds maart 2016 werk. In deze bijzondere ervaring namen Tjerk Ridder en musicus Mathijs Spek het publiek mee op een reis, met als universele thema's oorsprong, vastberadenheid, gastvrijheid, vooringenomenheid en vertrouwen. Het stuk toont wat kan gebeuren als mensen de moed hebben om zich open te stellen voor het onbekende.

Dit prikkelende stuk inspireerde me. Ook ik ging op een queeste, toen ik mij op dit promotieonderzoek stortte. Net als de reis van Tjerk, is de mijne er een van een zoektocht naar de verklaringen voor wat ik in mijn gegevens waarnam. Ik werd gedwongen mij open te stellen voor het nog onbekende. Onderweg had ik het geluk een paar fijne metgezellen te hebben, zonder wie de reis niet volbracht zou zijn. Mijn lange tocht was een oefening in geduld, doorzettingsvermogen en precisie, wat niet per se mijn grootste kwaliteiten zijn…

Tijdens mijn onderneming zijn er veel mooie momenten geweest, maar ook een paar dompers. Dat waren de tijden dat ik zeker anderen nodig had om verder te gaan. Aan allen die aan dit proefschrift en de onderliggende studies hebben bijgedragen en aan allen die mij op de goede én op de mindere momenten hebben gesteund, wil ik mijn dankbaarheid uitspreken.

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Curriculum vitae

Manuela Julien was born in Maputo – then called Lourenço Marques - the capital city of Mozambique. After secondary school, she followed the teacher training programme at Eduardo Mondlane University (UEM), Maputo.
In 1983 she graduated as a teacher of Portuguese and English, and started working as a teacher at the Josina Machel Secondary School in Maputo.
In 1985 she was offered the opportunity to improve her knowledge of English and language teaching skills with a one-year course in English as a Second and Foreign Language, at the Moray House College of Education, (now a constituent part of the University of Edinburgh), Scotland. On her return to Mozambique, she resumed English teaching, this time, in the Faculty of Linguistics at Eduardo Mondlane University.
In 1987 she was awarded a Fulbright Grant to pursue an MA degree in applied linguistics at Southern Illinois University, Carbondale, USA, from which she graduated in 1990. During this period she focused her interest on the cognitive processes in the acquisition of a third language. Her thesis work was dedicated to that subject and she was able to do field work in Mozambique and study the acquisition of English by first and second language speakers of Portuguese. After graduating, she returned to Mozambique where she went back to teaching, but with management responsibilities too. In the same period she also had a part-time assignment as a lecturer of psycholinguistics at the Institute of Higher Education in Maputo.
From 1991 to 1993 she studied at the Free University of Brussels (VUB) where she obtained an MSc in Neurolinguistics. In 1996 she became a licensed speech and language therapist after a short track course at the Fontys University of Applied Sciences, Eindhoven. From 1997 until 2009 she worked at the Audiology Centre in The Hague, first as a speech and language therapist and later as a clinical linguist. In 2009 she started her PhD research at Radboud University, the results of which are presented in this thesis.
Manuela Julien is the owner of the Knowledge Centre for Multilingual Development ‘Clínica Babilónica’, www.clinicababilonica.eu, in Wageningen.
She also works as a clinical linguist at the Pento Audiology Centre in Ede.